THE EFFECT OF ADHD ON SELF-ESTEEM IN MIDDLE CHILDHOOD

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I hereby certify that the work
embodied in this thesis is the result
of original research and contains
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ABSTRACT

One of the most common characteristics found in the adults and children with ADHD is poor self-esteem (Weiss, 1992; Nadeau 1995 cited by Bender 1997). The main purpose of the present study is to examine the relationship between self-esteem and ADHD in children and the effects of sex and age. It is suggested that children with ADHD would demonstrate low global self-esteem when compared with children without ADHD. Also that children with ADHD would have a higher occurrence of psychological distress than children without ADHD. Further it is expected that boys with ADHD will reveal lower self-esteem than girls with ADHD; and that older children with ADHD will demonstrate lower self-esteem than younger children with ADHD.

Forty-one children with ADHD participated in the study and one hundred and fifty seven children without ADHD. Most of the subjects were aged between 9 and 12 years. Most of the children with ADHD were under medication (Ritalin 40.5% and Dexamphetamine 54.8%). All subjects were given the Piers-Harris Children's Self-concept Scale "The way I feel about myself". All parents of the children with ADHD completed the subscale of Attention problems from the Child Behavioural Check List (CBCL).

The results of this study suggest that children with ADHD have lower self-esteem in comparison with children without ADHD. That is, children with ADHD children report poor self-evaluations on their own general behaviour and personal attributes.

For the children with ADHD no greater levels of anxiety and mood disorders, or depression were found. However it was demonstrated that children with ADHD evaluated themselves as having more behavioural problems than children without ADHD.

Additionally, no significant age differences were found for children with ADHD. However, the results did suggest that older children with ADHD tend to have lower self-

esteem than younger children with ADHD. No differences were found between boys and girls with ADHD.

The results of this study indicate that low self-esteem may be related to being unhappy, and less effective functioning for all the children. This was evident when a descriptive analysis was made on the subscale attention problems.

Although the results of the present study do not support the suggestions that age and sex affects the experience of ADHD, consideration of other factors such as social environment, suggest these constructs and the proposed hypotheses ought not to be discarded completely.

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CHAPTER 1: SELF-ESTEEM ON CHILDREN WITH ATTENTION DEFICIT HYPERACTIVITY DISORDER, ITS DEFINITION, SYMPTOMS AND MEDICATION

1.1 GENERAL INTRODUCTION

Attention Deficit Hyperactivity Disorder (ADHD) is one of the most common psychological or behavioural disorders present in childhood. It affects approximately 3-5% of school age children and yet it remains poorly understood. The principal symptoms for the diagnosis are problems in attention, impulsiveness and overactivity.

ADHD is difficult to define and it rarely occurs in a pure form. That is, without some accompanying problems such as learning difficulties or low self-esteem. ADHD is a syndrome, greatly in need of clarification and accepted definition before proper assessments and treatment is possible.

The following study provides an evaluation of self-esteem in children with ADHD and a investigation into the effects of age and sex. Previous research has been more directed to primary symptoms than secondary symptoms. The secondary symptoms are more difficult to treat and less easily recognised. They include low self-esteem, depression, boredom and frustration with school, fears of learning new things, and impaired relationships.

The central hypothesis of this study is that children with ADHD suffer from low self-esteem in comparison with the non-ADHD, without serious behaviour disorders. ADHD children will describe and evaluate their own behaviours and personal attributes poorly compared to the normal children in the Piers-Harris Children's self-Concept Scale "The Way I Feel About Myself".

There are several possible causes of low-self esteem in children with ADHD. The causes may differ from child to child. In some cases it could be assumed that the core deficits of attention and impulsivity may interfere with self-esteem. Nevertheless, it may be true that other children with ADHD, with learning problems and school failure may also have behavioural problems such as inattention, impulsivity, low motivation, low self-concept, and aggression. Behaviour problems and learning deficits seem to occur simultaneously but more or less independently due to common biological or environmental factors.

A variety of settings with stimulant medication also improves the quality of social interactions between children with ADHD and their parents, teachers, as well as peers and across a diversity of situations. This improvement is reflected in the scores related to self-esteem. Stimulant medications not only seem to alter the behaviour of children with ADHD but also indirectly affects the behaviours of important adults and peers toward these children.

It is of great importance that diagnosis of ADHD be made as early as possible so that damage to self-esteem is minimised. The role of social interaction, medication, academic support and parental skills are considered crucial in the development of self-esteem within children with ADHD. Evidence suggests that without intervention to help these children to develop a healthy self-esteem, there can be harmful impact in their lives during adolescence and adulthood.

Self-esteem in children with ADHD appears to be an important factor when defining the concept, assessing and treating the child. Self-esteem should be continuously explored and reviewed during the course of intervention with the child and the family.

As it is exposed later in this research, educational management represents an important priority and often forms the cornerstone of nonpharmacological, and pharmacological therapies. Cognitive behavioural therapies represent the most widely used alternative to pharmacotherapy and it has been useful with children who are tapering off medication as well as for those whose suffer low self-esteem. The effects of stimulants on attention and activity seem well established however effects on cognition, conduct and social behaviour are less established.

1.2 DIAGNOSTIC CRITERIA

Two of the significant diagnostic tools for children's mental and emotional disorders are i) the Diagnostic and the Statistical Manual of Mental Disorders (DSM-IV) (1994), and ii) the ICD-10 Classification of Mental and Behavioural Disorders (ICD-10) (1993). (See Appendix 1 and Appendix 2).

The criteria for diagnosis of Attention Deficit Hyperactivity Disorder in the (DSM-IV) and Hyperkinetic Disorder in the (ICD-10) have almost identical items in their criteria for Inattention and Hyperactivity-Impulsivity.

While the DSM-IV allows multiple diagnoses with co-morbid conditions such as Conduct Disorder, the ICD-10 contains a separate category of the Hyperkinetic Conduct Disorder. This distinction has significant implications for prevalence studies. (NHMRC, 1995).

The DSM-IV and ICD-10 Diagnostic Criteria for Research both require that symptoms should be observed in two out of three settings, home, school, and clinic.

1.3 PRIMARY SYMPTOMS

The literature on children with ADHD is plentiful. Discussion includes the primary features and related problems, the situational variability of these problems, their prevalence and their aetiologies. It was calculated by 1979 that approximately 2,000 studies existed in this disorder (Weiss & Hechtman , 1979 cited by Barkley, 1990, 1996) and this estimate has probably doubled since that time.

ADHD children are generally described as having chronic difficulties in the domain of inattention, impulsivity, and overactivity. They are thought to demonstrated these characteristics early, to a degree that is inappropriate for their age or developmental level, and across a variety of circumstances that overload their capacity to pay attention, inhibit their impulsiveness, and confine their movements (Barkley, 1996).

Presently ADHD is thought to contain two major symptoms: (a) Inattention and (b) Hyperactive-impulsive behaviour (disinhibition).

Children having ADHD manifest marked inattention, compared to normal children of the same age and sex (Barkley, 1990). Moreover, inattentiveness is a multidimensional construct that involves problems with alertness, arousal, selectivity, sustained attention, distractibility, or span of apprehension (Hale & Lewis, 1979 cited by Barkley, 1990).

The first symptom, inattention is presumed to manifest itself in the child's inability to sustain attention or respond to tasks or play activities as long as others of the same age. They also have problems in following through on rules and commands (Barkley, 1996). It seems that having ADHD means that tasks with little instant reward or appeal are quickly forgotten, and therefore unlikely to be completed (Barkley, 1990).

Parents and teachers frequently object that these children do not seem to listen as well as they should do for their age, cannot concentrate, are easily distracted, fail to complete assignments, daydream and change activities frequently in comparison to others, and

need to be constantly supervised (Barkley, DuPaul, & McMurray, in press, Stewart, Pitts, Craig, & Dieruf, 1966 cited by Barkley, 1997).

The second major symptom, behavioural dishinbition (Impulsivity) is multidimensional in nature (Milich & Kramer, 1985 cited by Barkley 1990; Barkley 1996; Barkley, 1997). The definition of dishinbition in relation to ADHD is uncertain and problematic. Clinically, these children respond too quickly to situations without waiting for instructions to be completed, and therefore fail to appreciate properly what is requested of them. Indiscriminate or careless errors are common. Children with ADHD tend to participate in potentially negative, destructive, or even dangerous activities that may be associated with particular unnecessary risk taking behaviours. Consequently, accidental poisoning and injuries are common. ADHD children may carelessly hurt themselves or damage objects (Barkley, 1990).

Impulsivity also involves poor sustained inhibition of responding (Gordon, 1979 cited by Barkley, 1990), poor delay of gratification (Rapport, Tucker, DuPaul, Merlo & Stoner, 1986 cited by Barkley, 1996) or impaired adherence to commands to control or restrain behaviour in social contexts (Kendall & Wilcox, 1979 cited by Barkley 1990, 1996). Poor regulation and inhibition of behaviour is in fact the hallmark of this disorder.

Interestingly, Barkley (1997) suggests that it is not inattention that distinguishes ADHD children as much as it is their hyperactive, impulsive and disinhibited behaviour. Disinhibition could be seen as the most important of the three types of symptoms in distinguishing children with ADHD from those with other psychiatric conditions or from those who have none. This dishinbition or poor inhibitory regulation of behaviour may result in the attention problems often observed in these children. That is, "*the attention problems may be secondary to a disorder of behavioural regulation and inhibition, rather seeing a primary and distinct deficit apart from such dishinbition*" (Barkley, 1990 p. 27).

Hyperactivity may be manifested by fidgetiness, excessive or developmentally inappropriate levels of activity in both motor or vocal spheres. Unnecessary gross motor

activity and restlessness are common place. These movements are often superfluous to the task or situation and at times seem pointless (Barkley 1990, 1996).

Research has shown that ADHD children are more active than other children (Barkley & Ullman, 1975; Barkley & Cunningham, 1979; Luck, 1985 cited by Barkley, 1996), are less mature in controlling motor overflow movements (Denckla & Rudel, 1978), have considerable difficulties with stopping and sustaining behaviour (Schachar & Logan, 1990; Barkley, Cunningham, & Karlson, 1983 cited by Barkley, 1996), interrupt conversations (Malone, Kerschner, & Swanson, 1994), and are less able to resist immediate temptation and delay gratification (Barkley, 1996).

Problems with disinhibition are first noted when children are three to four years of age. Those related to inattention are observed later in the development of the child. These occur around five to seven years of age, specifically when the children begin schooling or even later. In some children with ADHD, problem of attention may not appear until the early elementary school grades (Hart et al., in Press, cited by Barkley, 1996 ; Loeber, Green, Lahey, Christ, & Fricks, 1992).

Whereas the symptoms of disinhibition in DSM IV criteria items lists seem to decrease with age, those of inattention stay comparatively stable during elementary grades (Hart et al., in press cited by Barkley, 1996). The research shows that the inattention symptoms decline by adolescence. However, it is still a puzzle why inattention problems first appear at a later stage in development than the disinhibitory symptoms.

During the past decade, research into the nature of deficits in ADHD has been unable to clearly demonstrate that the problems of attending to tasks are due to attentional deficits and area unique in some way. Problems in response inhibitions and motor system control have been more reliably confirmed (Barkley, Grodzinsky & DuPaul, 1992; Schachar & Logan, 1990; Sergeant & Van de Meer, 1994 cited by Barkley, 1996).

Researchers have found evidence that the problems with hyperactivity and impulsivity were dependent symptoms and formed a single dimension of behaviour, possibly best

classified as disinhibition (Achenbach & Edelbrock, 1983; Goyette Conner, & Ulrich, 1978 cited by Barkley, 1996).

Controversy continues over the core deficits in ADHD, but at this time there seems to be agreement that primary problem is behavioural inhibition. The nature of the problems of substaining attention in these children continues to be debated, but evidence points to deficiencies within the neurologically anterior motor control systems themselves. Controversy relating to whether ADHD has subtypes or not composed primarily of inattention is debated within the greater condition of ADHD. Discussion within the field points to the conclusion that ADHD is a distinct disorder having little connection with other externalising or disruptive behaviour disorders (Barkley, 1990; Barkley et al., 1992; Lahey & Carlson, 1992; Goodyear & Hynd, 1992; Hinshaw, 1994 cited by Barkley, 1996).

When DSM-IV (APA, 1994) was published the criteria included two separate lists of items, one for inattention and another for hyperactive impulsivity. DSM-III-R (1987) subdivided ADHD diagnosis into a) a form principally characterised by inattention (ADHD-predominantly Inactive type) and b) a subtype characterised mainly with hyperactive-impulsive behaviour without inattention (ADHD predominantly Impulsive type). Using this diagnostic form children having notable problems from both lists were given the diagnosis ADHD combined type.

In the following study, diagnosis for ADHD is made on the basis of DSM-IV criteria that include two separate lists of items, one for innattention problems and the other for hyperactivity and impulsivity.

1.4 PREVALENCE

Most studies calculate that between 3% and 5% of all children display characteristics of ADHD to an extent that they could be diagnosed (Barkley, 1990; APA, 1994; DuPaul & Stoner, 1994). Nevertheless, estimates on the percentage of children affected with ADHD range from 1% to as high as 23% (Barkley, 1990; Shaywitz, 1988; Bender, 1997).

Maag and Reid (1994) indicate that studies depending on parent's, teacher's and physician's estimates yield a lower prevalence percentage than studies done in clinic hospital and research settings - usually between 1% and 2%.

More boys than girls are diagnosed with ADHD. The ratio is between six and nine boys to one girl in clinical samples. (Wicks & Israel, 1991). Proportions that range between 3:1 (male : female) and 9:1 are discussed in the literature (APA, 1994, Barkley, 1990). Bender (1997) referring to studies by DuPaul & Stoner (1994), question studies that indicate the lower male to female ratio. He points out that higher male to female ratios are usually identified in clinic settings, while the lower ratio is found in schools and community based placements.

Barkley (1996) states that it is unclear at this time why boys are more likely to have ADHD than girls. He suggests that males are more aggressive and oppositional and for this reason boys are more often diagnosed as having ADHD. It is also possible that these behaviours in boys cause higher referrals.

Interestingly, Szatmari (1992) found that gender was no longer related to the occurrence of ADHD once other comorbid conditions were established. The Statistical analysis controlling for those comorbid conditions implies that this may be the case.

Szatmari (1992) cited by Barkley (1996) also analysed the findings of six large epidemiological studies carried out in six different North American cities. This review

identified the incidence of cases of ADHD in the population ranging from a low 2% to a high of 6.3% with most falling within the range of 4.2% to 6.3%.

Barkley (1996) considers that the differences in prevalence rates are due to different methods employed in selecting these study samples. The samples vary widely on various factors including nationality, SES, as well as diagnostic criteria for ADHD.

Interestingly, Australian studies have shown prevalence rates ranging between 2.3% and 6% depending on the methodology used (Glow, 1980).

1.5 THE IMPORTANCE OF SELF-ESTEEM AND SELF-CONCEPT FOR CHILDREN AND ADOLESCENTS: ITS DEFINITIONS, AND DISTINCTIONS

One of the most common characteristics found in the adults and children with ADHD is poor self-esteem (Weiss, 1992; Nadeau, 1995, cited by Bender, 1997). In fact, most researchers assert that a low self-concept can be problematic in childhood, adolescents and adults. (Wender, 1987; Barkley, 1990; Hollowell & Ratey; 1994; Selikowitz, 1995; Slomkowski et al., 1995; Bender, 1997)

Most children with ADHD suffer from low self-esteem. This may become discernible to the parents when the child makes negative comments such as " I am dumb" "I am silly" and so on. Poor self-esteem may be manifested by excessive moodiness, irritability, tearfulness, or withdrawal. In other cases problems with self-esteem may not be apparent. Particular behaviours such as aggression, and a strong desire to control situations, a dislike for being cuddled, and excessive quitting can reflect a fragile self-esteem (Selikowitz, 1995; Whitman & Smith, 1991).

The importance of self-esteem has consistently been appreciated by those who work with children. It is difficult to have close contact with children, especially with those with ADHD, and avoid being concerned with their central feelings about themselves as individuals. Recently, it seems that self-esteem for children with ADHD has become an

increasingly popular topic; books for parents, teachers, counsellors and for children themselves, stress the need for "positive self-esteem". Educational institutions are also becoming involved by assuming responsibility for teaching children that they are worthwhile, often employing standardised self-esteem testing and classroom curricula that focus on enhancing feelings of self-worth. Programs such as these have generated many questions about working with children who have self-esteem problems.

It is easy to become confused when thinking about children's self-esteem. The language is often unclear, with "self-esteem" and "self-concept" often used interchangeably. The cause and effect dynamics are difficult to understand. The question remains whether low self-esteem creates other problems in children's lives, or whether problems themselves add to an unsteady sense of self-worth? In practice, it can be hard to identify children who are having trouble with self-esteem.

Self-esteem can be distinguished from self-concept. Self-concept is concerned with the pattern of schema that an individual employs to describe himself or herself. Self-esteem is an evaluation of the information comprised in the self-concept, and is acquired from a child's feelings about all the things he or she is. If a child places a high value in being a superior student but is himself only an average or poor student, that child's self-esteem will suffer. The same child, however, could evaluate musical ability and popularity as more highly desirable than academic ability, and therefore will have a high self-esteem if he/she is accomplished in the former. An individual's self-esteem is based upon a mixture of objective information about oneself and subjective evaluation of that information (Phillips, 1986; Pope & McHale, & Craighead, 1988 ; Hattie,1992; Harter, 1993).

Pope, MacHale & Craighead (1988) propose that one forms a sense of self-esteem by thinking about the perceived self and the ideal self. The perceived self is the same as "self-concept" i.e. an objective view of those skills, characteristics and qualities which are present and absent. The ideal self is an image of the person one would like to be and the attributes one would like to possess. When the perceived and ideal selves are a good match, then self-esteem will be positive. For example, if a child who values academic success is a good student, that child will feel good about himself/ herself. So we can

deduce that this child has a positive evaluation of his/her actual attributes. Similarly a child whose ideal self is to be popular but has few friends will have low self-esteem. The inconsistency and mismatch between perceived self and ideal self lead to problems with self-esteem.

A high self esteem is considered in this study to be a "healthy" view of the self, one that realistically encompasses imperfections but is not severely critical of them. A child with positive self-esteem evaluates herself in a positive way and feels good about her strong points. Feeling satisfied with major attributions of the self does not indicate that the individual has no desire to be different in any way.

Children tend to have similar views about qualities they value. This is caused, in part, by the structure of their lives (they go school, most live in families etc) and in part by the developmental tasks facing them (they are learning to relate to others, and are assimilating their changing capabilities and appearances of their bodies). Therefore, it is useful to contemplate a child's self-esteem in five areas: social, academic, family, body image, and global self-esteem (Pope, McHale, & Craighead, 1988).

The social area includes the child's personal feelings about relating to others. A child whose social needs are being meet. This is so even when they appear not to be "popular" by observers will feel comfortable and happy socially.

The academic area focuses on the child's evaluation of himself as a student. This is not merely an assessment of academic ability and achievement. If children meet their own standards for academic achievements. A child's self-evaluation is most often moulded by family, teachers and friends, then their academic self-esteem will be positive.

The family self-esteem deals with his/her feelings about himself/herself as a member of his/her family. Children who experience that they are valued member of their families, who make their own unique contribution, and who are secure in the love and respect they get from parents and siblings will have a highly positive self-esteem in this area.

Body image is a combination of physical appearances and abilities. The child's self-esteem in this area is based upon his satisfaction with the way his body appears and performs.

The global self-esteem is a more general appraisal of the self and is based on the child's evaluation of all the parts of himself. A positive global self-esteem would be reflected in feelings such as " I am a good person" or " I like most things about my self".

Self-esteem emanates from the discrepancies between the perceived self, or self-concept. It represents an objective view of the self and the ideal self, or what the child values or wants to be like. A large discrepancy results in low self-esteem, while a small discrepancy is usually characteristic of high self-esteem.

Most practitioners view positive self-esteem as a main component in a good social-emotional adjustment. This belief is prevalent, and has a long history. Early psychologists and sociologists, such as Williams James, George Herbert Mead and Charles Cooley, were the first to emphasise the importance of a positive self-esteem. Years later, among them Adler, Sullivan, and Horney - included the self-concept into their theories of personality, as did Rogers and Fromm (Pope, McHale, & Craighead, 1988; Oppenheimer, Warnars-Kleverlaan, & Molenaar, 1990; Hattie, 1992).

Recently, psychologists have combined theory with empirical work to infer that positive self-esteem is related to happier and more effective functioning. For example, depression has been connected to a cognitive style that incorporates excessively critical and negative evaluations of the self (Pope ; McHale & Craighead, 1988; Bednar et al., 1989; Garbarino et al., 1989).

For children, a healthy self-esteem has been understood as especially important, since it serves as the basis for a child's perceptions of life experiences. The social-emotional competence derived from this positive self-appraisal can be a force that encourages the child to avoid future severe problems. This view is supported in that DSM-IV, (American Psychiatric Association, 1994) includes the self-esteem as a criterion in some

psychiatric diagnoses. Low self-esteem is mentioned as an associated feature in several childhood disorders, including Attention Deficit Hyperactivity Disorder.

It is still unclear whether low-self esteem actually is the cause of any disorder, but the fact that it can be related to serious problems in childhood may be reason enough to intervene. In any case, it appears that a strong self-esteem could compensate some childhood problems, to some extent, in less severe difficulties. Children who feel good about themselves may cope better with conflicts and problems they encounter so that they never develop into major difficulties.

Garbarino et al., (1989) noted that the way children feel about being competent, their attitudes toward adults, and how they defend themselves from difficulties and negative feelings, all affect their self-esteem. Some children experience approval, acceptance, success and the opportunity to master situations on a regular basis. Others live under unrelenting humiliation, rejection, and failure. Some children are flexible and energetic, others are vulnerable and lethargic. From the interaction of the child's experiences and characteristics comes a perspective on himself/herself, or self-esteem, and strategies for dealing with the world, or coping mechanisms.

Self-esteem influences how children behave and communicate. For example, when they are feeling good about themselves, they are apt to be open to communication. At the same time they are resistant to adult probing that threatens to expose areas of diminished self-esteem. Efforts to cope with assaults on self-esteem or other stresses may also induce the child to turn away from inquiries or to respond with defenses, such as denial or projection of blame onto someone else (Garbarino et al., 1989).

Self-esteem therefore is a vital aspect of a child's overall functioning. It seems to be associated with other areas, including psychological health and academic performance, in an interactional manner, that is, self-esteem may be both a cause and have effects on the type of functioning which occurs in other areas.

Other researchers such as Harter (1993) established a model of the nature of self-evaluation in older children and adolescents taking concepts from James (1892, in

Harter, 1993) and Cooley (1902, in Harter, 1993), two historical scholars of the self. Each of these theorists was explicit on the point that one possesses a global concept of self over and above more specific self-evaluations.

For James, global self-esteem was obtained by the ratio of one's successes to one's pretensions. According to this formulation, individuals do not examine their every action or quality rather, they concentrate primarily on ability in domains of importance where one has motivations to succeed. If one appreciates oneself as capable in domains where one aspires to surpass, one will have high self-esteem (Harter, 1988, 1993).

In contrast to James, who focused primarily on the individual's cognitive evaluation of his or her adequacy, Cooley theorised the genesis of self-esteem was primarily social in nature, and he used a mirror metaphor in describing his concept of the "looking glass self".

For Cooley, the self was constructed by casting one's look into the social mirror to verify the opinions of significant others toward the self. According to this perspective, if others hold one in high regard, one's own sense of self-esteem will be high.

Harter (1993) determined that children, at around 8 years, form domain-specific evaluations of their competence and abilities. They also form a more global concept of their worth as a person at this time. *"The most pertinent domains which were included in her Self-Perception Profile For Children are scholastic competence, athletic competence, social acceptance, physical appearance, and behavioural conduct". (p.137 Harter, 1985a).*

Findings by Harter and colleagues (1993) have supported what James hypothesised. By way of illustration, in Figure 1, it can be seen that the child C, with high self-esteem, judges scholastic and athletic competence to be not very important. Therefore, such a child can discount the importance of areas in which he or she is less capable while focussing on important domains in which he or she is coping well. In contrast, Child D is unable to discount the importance of scholastic and athletic ability, causing a vast

discrepancy between importance of judgments and very low ability/ adequacy evaluations in these two domains.

They also examined the differences between importance ratings and competence judgment in each domain. By taking an average of domains they found that the larger the discrepancy the lower one's self-worth.

The domains perspective of Harter's is not supported by other findings where the focus has been on the differences between one's ideal and real selves (Glick & Zigler, 1985; Markus & Nurious, 1986; Rosenberg, 1979). Discrepancies between "ideal" and "real" selves are not only predictive of self-esteem, but are also related to disorders such as depression and anxiety (Higgins, 1987, 1989 cited by Harter, 1993). It is important to highlight here that from a developmental viewpoint, these discrepancy models do not apply to younger children. Competence does not seem to be as critical to young children's self-esteem, nor are young children cognitive able to make a contrast between concepts, such as importance rating and self-evaluations (Harter, 1990, 1993).

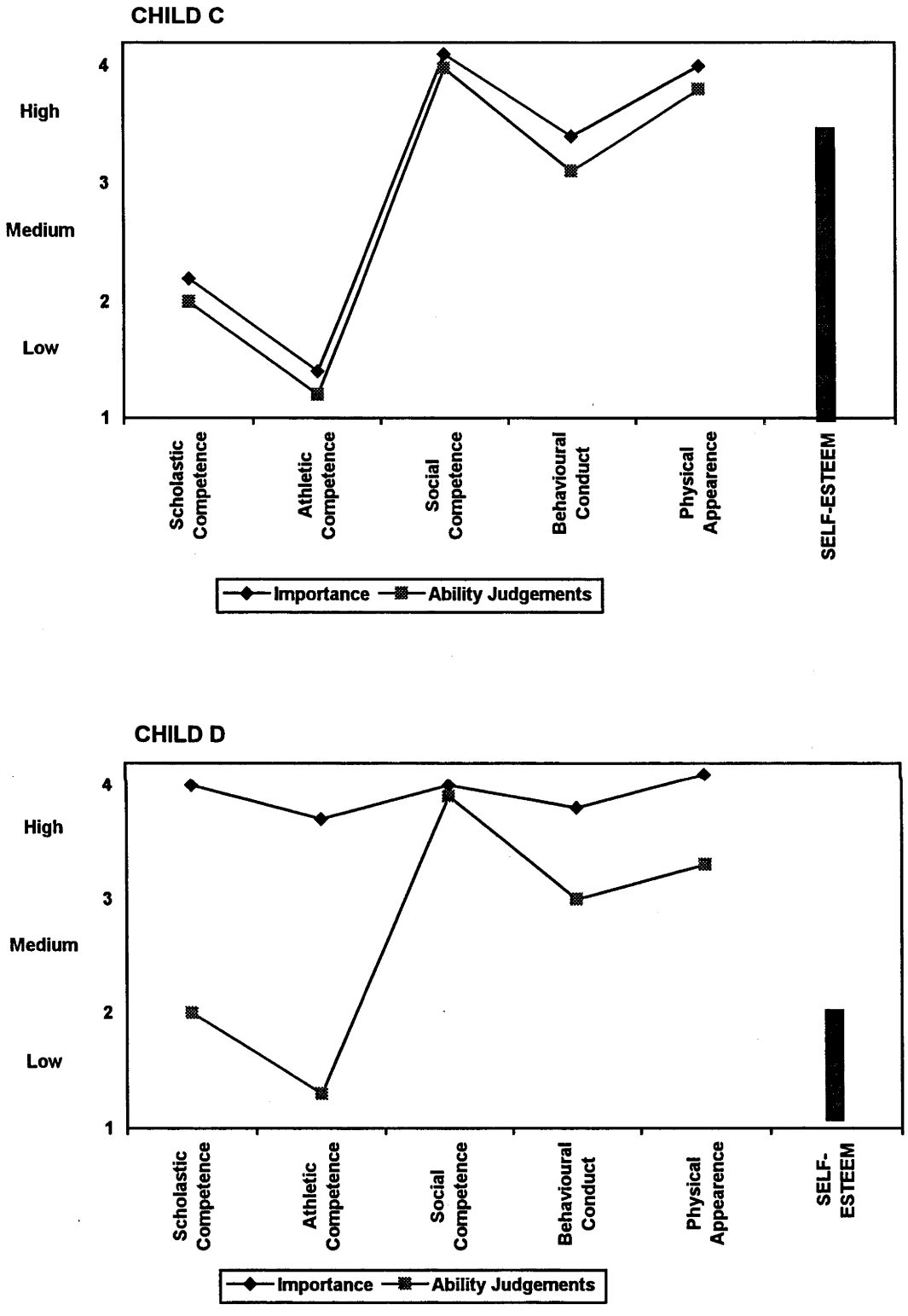

Figure 1: Profile of the two young adolescents with similar scores for specific domains but with different levels of self-esteem (p.90 Harter, 1993).

1.6 DEVELOPMENTAL CHARACTERISTICS OF SELF-CONCEPT AND SELF-ESTEEM IN CHILDREN AND ADOLESCENTS

There is a considerable literature on the development of self-concept. Most research points to the critical influences of both early childhood and social interaction. However, there have been few longitudinal studies, and there is little evidence available to support many of the theories about how self-concept and self-esteem develop. (Hattie, 1992; Harter, 1988).

Many researchers have concluded that self-concept is developed very early in childhood and that it is lasting or almost permanent. Rosenberg (1979) for example, affirmed that *"people who have developed self-pictures early in life frequently continue to hold these views long after the actual self has changed radically" (p.128).*

Anderson (1952) concluded that the first year is the most significant for developing self-concept and that each succeeding year becomes of lesser importance. The image is fundamentally finished before adolescence. Freudians also theorise that early childhood is the stage when self-concept is created and stabilised.

Other researchers have identified stages for the growth of self-concept. Erikson (1963 cited by Hattie, 1992) theorised eight stages that have to be experienced and successfully lived through in the developmental of the self: (a) trust versus mistrust; (b) autonomy versus shame; (c) initiative versus guilt; (d) industry versus inferiority; (e) identity versus role diffusion; (f) intimacy versus isolation; (g) generativity versus stagnation; and (h) ego integrity versus despair. At each stage there are particular tasks to be achieved, and the satisfactory completion of the task is necessary before the next stage can be undertaken.

There are many arguments against "stage models" in general and Erikson's model in particular. Some researchers argue that particular features of a stage model can be taken up earlier than predicted or in a different sequence. Hattie (1992) points out that although stages may well exist, and that individuals may go through each phase in order, these are not as fixed as the model suggests.

Hattie (1992), also suggested that self-concept develops and changes according to a diversity of factors. These include learning to distinguish the self- from others (Kelly, 1955; Laing, 1969 in Hattie, 1992); learning to differentiate the self from the environment (Lafitte, 1957; Lewis & Brooks-Gunn; 1979 in Hattie, 1992) changing of major reference groups, which introduces changes in expectations (Mischel, 1977); the individual's modification of the origin of personal causation (de Charm, 1968 in Hattie, 1992); varying cognitive processing, principally with the development of formal operations (Piaget, 1977 in Hattie, 1992); changing and/or realising cultural values; and as we modify the manner in which we receive confirmation and disconfirmation (Laing, 1969 in Hattie, 1992). These developments are interacting and differing in importance depending on the preceding development. Table 1 shows the importance of the different processes at different ages.

Table 1

Seven Processes in the Development of Self-Concept (Hattie, 1992 p.119)

Processes	Age (months)				
	0-2	3-9	9-17	17-25	25+
1. as we learn to distinguish self and others	xx	xx	xx	x	
2. as we learn to distinguish self and environment	xx	x			
3. as major reference groups change		xx	x	x	
4. as we change source of personal causation	xx	x	xx		x
5. as we change recognitive development	xx	x	xxx		
6. as we change and/or realise cultural values		xx	x	x	
7. as we change our reception of confirmation and disconfirmation		xx		x	

X= importance , XX= high importance

1.6.1 Steps in Self-Concept Development

There are 4 stages in the development of self-concept. The first stage in concerned with the physical self, the second stage is related with attributes and appearance self, the third stage focuses on psychological self and the fourth stage is associated with the development of the scopula self.

Stage 1

The first step in self-concept development takes place when the infant learns to distinguish him or herself from the environment and progressively understands that he or she exist as a separate and distinct physical entity. During this process the infant creates an internal visual image of his or her own body and face. Although infants as young as 6 weeks look at themselves and try to touch themselves when placed before the mirror, it appears that most children do not create comprehensible mental image of their face until they are approximately 18 months (Perry & Bussey, 1984; Glick & Zigler, 1985; Phillips, 1986; Pope, McHale & Craighead, 1988) .

Stage 2

Perry & Bussey, (1984), and Phillips, (1986) also postulated that once children acquire language they can describe themselves. In their self-descriptions, children younger than 8 or 9 focus on physical and observable qualities, such as their appearance, possessions, house and friends, and favourite activities.

Stage 3

Psychological factors barely appear in the self-description of children younger than 8 or 9. However it is certain that children much younger than this are aware that they own a private, psychological self in addition to the physical self. Children by the age of 3 start to differentiate between the physical self that is visible to others from the inner, thinking self that is not (Maccoby, 1980 cited by Perry & Bussey, 1984).

Stage 4

Nevertheless it is not until well into elementary school years that children describe themselves in terms of stable personality traits and other underlying psychological

qualities describe their personalities and behaviours. Children do not assign labels to themselves until they are 8 or 9 years old . According to Piaget's view, children must have attained the concrete operational stage before they can identify psychological attributes which are enduring (Phillips, 1986 ; Glick & Zinger, 1985; Aboud & Ruble,1987; Garbarino et al., 1989).

As children develop, their self-concepts become an extension of the social roles and groups to which they belong or aspire. At this time their self-descriptions include annotations such as, "I am a girl"; "I am John's friend", "I am a socialist" (Kuh, 1960 cited by Perry & Bussey, 1984). Self-concept development implies recognising the psychological dimensions on which one differs from other people. However, Maccoby (1980) cited by Perry & Bussey, 1986 points out, "*a parallel process is also taking place, and is the opposite of differentiation. Increasingly the self is invested in or extended to other individuals and groups of people" (p. 36).*

Perry and Bussey (1984) and Phillips (1986) also pointed out that as children extend their list of so-called "social selves" they are learning that distinct social groups and roles place special demands and expectations where upon they learn to adjust their actions and presentations of the self to particular audiences.

1.6.2 Developmental Characteristics Between 9 Years Old and Adolescence

From the age of 8 or 9 onward, children face substantial changes that consequently induce modification of their self-concept. At about this age there is a marked increase in the development of brain cells, principally in the frontal lobes, that result in greater abilities for planning intentional and abstract behaviour (Luria, 1973 cited by Hattie, 1992). Piaget (1977) has called the realisation of these behaviours "formal operational stage". During this stage there are also changes in the body associated with the onset of puberty and growth.

These physical and psychological changes occur at a time in Western society when young adolescents advance from primary school to secondary schools. In secondary schools students encounter less structured and more autonomous education and training. Subsequently, there are changes in expectations of the students and by teachers, family and peers. Adolescents believe that they look and feel different, that others respond to them differently, and others expect them to perform differently than they had before (Hattie, 1992).

Rosenberg (1979), documented a marked increase of self-consciousness and instability of self-concept in adolescents but no decline in general self-esteem. However, others have not reported such decreases or increases (Engel, 1959). Interestingly, Protinsky and Farrier (1980) examined a cross-sectional sample of 210 students in preadolescence (9-11), early adolescence (12-14), middle adolescence (15-16), and late adolescence (17-18). They concluded that self-concept was most unstable in preadolescence and early adolescence and then became more stable at the later adolescent stages.

Adolescence is the time when the child begins to put more emphasis on peers than family and there is an accompanying (sometimes painful) loosening of parental bonds. There are four factors that are important in this developmental process: firstly personal causation; secondly, changes in cognitive processing; thirdly self and others; and fourthly expectations and references groups.

1.6.2.1 Personal Causation

Rosenberg (1979) has examined changes in self-concept as the individual moves from middle childhood to adolescence. He used a diversity of questions about locus of self-knowledge, points of pride, points of shame, sense of distinctiveness, sense of commonality, and future self. He found that adolescents, relative to the younger children, are more likely to answer these questions in terms of their psychological interior. In others words, the adolescent tends to cite general thoughts and feelings, specific interpersonal feelings, and private wishes, desires, and aspirations. Young

children are more likely to cite socially exterior and visible virtues such as abilities, physical attribute, objective demographic features, and individual interests and attitudes.

1.6.2.2 Changes in Cognitive Processing

The essential explanation of change in adolescent self-concept is associated with the development of higher order cognitive processes in adolescence. Younger children are generally egocentric, whereas older children are less concerned with their own private world and more able to adjust to external reality (Rosenberg, 1979). The sources of confirmation and disconfirmation also change. Older children are capable of adopting an objective detached view and tend to think of themselves in terms of the unobservable. It seems that this is because the adolescent has developed the tendency to reflect on their inner world of thoughts, feelings and wishes (Hattie, 1992; Garbarino et al., 1989; James, 1987; Little, 1987; Simmons, 1987; Harter, 1993).

Changes in cognitive abilities also lead to more interest in ideals and the ideal self. Preadolescents and adolescents begin to reconfigure the various views of self rather than merely add new perspectives. The adolescent converts these perspectives into higher-order concepts (Hattie, 1992).

Another change according to Hattie's view (1992) is that schooling becomes more urgent, the use of schooling more clear, and parental pressure to achieve becomes stronger. When questioned about schooling, adolescents tend to answer by talking about either friendship and social status rather than about academic accomplishment.

1.6.2.3 Self and Others

Rosenberg (1979) believes that disturbances in self-concept seem to reach a peak in early adolescence. From age 9 onward, children increasingly use information on peers' achievements to make comparisons with their own performance (Rubin, Parsons, &

Ross, 1977; Vernoff, 1969 cited by Rosenberg, 1979). According to Rosenberg (1979) cited by Hattie (1992) these comparisons can be explained by various interrelated factors. The beginning of puberty causes direct and serious challenges to the previously formed concept of self. Moreover, at the secondary school the individual is faced with a new group of peers and a multiplicity of teachers with whom no firm set of mutual expectations have been established. *" The individual becomes keenly aware of him or herself as an object of observation by others and in the attempt to see himself or herself through others' eyes, a new order of complexity is introduced"* (p. 34 Hattie, 1992 & Simmons, 1987).

The adolescent learns what others expect of him or her, establishes a more stable and new view of his or her strengths and weaknesses and gains a new appreciation of the self. Elkind (1971) argued that this change of perspective during adolescence represents development of "a true sense of self' p.56. Hattie (1992) concluded that younger children *"are aware of themselves and they are not able to put themselves in the other pupils' shoes and to look at themselves from that perspective. Adolescents can do this and do engage in such self-watching to a considerable extent*"(p. 72).

1.6.2.4 Expectation and References Groups

Another finding from Rosenberg (1979) is that adolescents change their self-concept in relation to how they perceived themselves according to adults' perspective. Adolescents tend to believe the adult's view of them rather than accept their own view because of their respect of adult authority. At some stage near to adolescence, *"a child rebels against the nexus of bonds which bind him to those parents and siblings whom he has not chosen; he does not wish to be defined as his father's son, or sister's brother"* (p. 67 Laing, 1961 cited by Hattie, 1992). The preadolescent and adolescent encounter circumstances that force a choice between social groups, peers and family (Mischel & Mischel, 1977), and this can induce internal conflicts. Reduction of the importance of the family require great deal of support from peer groups. Without such support there can be a decline in self-concept.

There are different aspects of transition within school systems during this develomental stage that are meaninful. Some researchers have documented decreases in self-esteem when the child changes school systems (Simmons & Blyth, 1987). Interestingly, others have reported that the self-esteem of 11 to 14 years old is the lowest in comparison to other age groups (Simmons, Rosenberg, & Rosenberg, 1973), whereas others have concluded that self-esteem is lowest immediately after transition but regained during the succeeding grade (Eccles, Wigfield, Fanagan, Miller, Reuman & Yee, 1989; Hart, 1988).

In conclusion it appears that the development of self-concept comprises several factors. It permeates the development of each individual and generally is acquired implicitly or indirectly through such factors as empathy, delay of gratification, and learning personal control. Some factors are more prevalent than others, while some are more powerful at varying ages (see the Table 1). For younger children the focus is on learning various physical aspects of self. Their most critical concerns are empathy, the environment, and the formation of personal causation. Preadolescence and adolescence is a time when the most important factors seem to be cognitive development (principally integration), self-confidence, and higher order of functioning.

1.7 SELF-ESTEEM IN ADHD CHILDREN AND ADOLESCENTS: ITS ASSOCIATED PSYCHOLOGICAL FACTORS

As noted earlier one of the most common characteristics found in adults and children with ADHD is poor self-esteem, which can be problematic at all stages. Poor self-esteem is manifested by excessive moodiness, irritability, tearfulness, or withdrawal (Wender, 1987, Barkley 1990; Hollowell & Ratey, 1994, Selikowitz, 1995; Slomkowski et al., 1995; Bender, 1997).

While it seems true that children with ADHD repeatedly experience failure because of their condition, a substantial reason for their poor self-esteem may be associated with immaturities in the self-appraisal mechanism of the brain. Not only is it difficult to

manage daily tasks as a child with ADHD, but children with ADHD are very critical of themselves (Hallowell & Ratey 1994; Selikowitz , 1995).

The part of the brain that controls self-esteem is the limbic system which lies deep within the frontal part of the brain. The frontal parts of the brain receive highly processed and filtered sensory information from other parts of the brain. That information ultimately reaches the limbic system, which controls emotional responses and feelings. There is evidence that this part of the brain has not matured fully in children with ADHD (Barkley, 1990, Selikowitz, 1995).

Selikowitz (1995) also indicates that self-appraisal in children with ADHD is immature. For example, young children tend to look for someone or something to blame for things that go wrong. The child projects the "locus of blame" on to his mother, siblings, including inanimate objects. Children with ADHD frequently project the locus of blame onto themselves and hence appraise themselves as responsible for things that go wrong. On the contrary, if things are successful they may not attribute these to their own capabilities. Children with ADHD appear to have difficulties with developing appropriate feelings of autonomy or competence which are essential for the adequate development of self-worth.

Due to an immature appraisal system, children with ADHD can easily attribute negative intentions to other people when these intentions do not exist. They are consequently prompted to feel threatened and discouraged. They also project blame onto themselves and feel that they are incompetent. It is therefore not surprising that these children can become depressed and withdrawn (Selikowitz, 1995).

Interestingly, Selikowitz (1995) also advises that children with ADHD are at risk of problems with self-esteem. Firstly, they have many difficulties in their every day performance due to their problems with poor attention span, impulsivity, poor social cognition, and problems with learning. Consequently they regularly experience failure and criticism. Secondly, they have problems with self appraisal that lead them to experience inappropriately negative feelings of self-worth.

Many unwanted behaviours that are seen in children with ADHD are due to self-esteem. It is essential that parents and teachers recognise this before trying to treat the behaviour. Selikowitz (1995) considers that children with ADHD have dysfunctional behaviours such as:

(1) **Developing the habit of quitting** as a form of coping with feelings of inadequacy.

(2) **Avoiding cooperation** in activities.

(3) **Behaving in a hostile way when praised**. Instead of enjoying praise, they may become angry and negative. They feel inadequate, and any praise is distorted and taken as implied criticism.

(4) **Being tactile defensive**. Children with ADHD often do not like being touched or cuddled. This is because being cuddled makes them feel very vulnerable to rejection.

(5) **Cheating**. This may happen especially at school. The child believes that he or she can not win a game so changes the rules and copies answers.

(6) **Regressive behaviour**. By adopting a childish manner, they give the impression that they are too young to be criticised for their failures.

(7) **Eluding school**. They complain of being ill, because they are anxious about going to school. They may experience stress-related symptoms associated with abdominal pain and headaches. This avoidance is generally due to distress about academic or social difficulties.

(8) **Controlling behaviour**. Many children with low self-esteem experience little control over their own lives so that they feel quite helpless. Some children respond by trying to command and dominate others. They defy adults, and usually seek to dominate and control situations. Selikowitz (1995) emphasises that the principal goal of any treatment of these behaviours should be to sustain the child's feelings of self-esteem.

Bender (1997) points out that children with ADHD are often rejected by their peers. Those with comorbid ADHD and aggressive features are almost universally repelled by age mates (Milich & Landau, 1989 cited in Hinshaw, 1992). Given the strong predictive power of peer rejection in childhood for a host of problems later in life (Parker & Asher, 1987, cited by Bender,1997; Weiss, Hechtman, & Perlman, 1978), it is not surprising that children with ADHD repeatedly exhibit low self-esteem that remains throughout childhood and into adolescence. It is vital for clinicians, parents, and educators to be

aware that such additional problems can exist along with ADHD so that interventions should be designed to assist the child in all problem areas.

Weiss and Hechtman (1986) suggest that while present, the primary ADHD symptoms are not the major concern of either parents or adolescents. Instead, poor school work, poor peer relations, difficulties associated with authority especially at school, and low self-esteem are of significantly greater concern during adolescence. Barkley (1990) and Virtanen & Moilanen (1991) noted that parents of children with ADHD become more anxious and worried when their children enter adolescence. Parents also experience the impact of ADHD symptoms on their own personal feelings of satisfaction and self-acceptance.

Barkley (1990) showed that entering school had a major impact on the lives of children with ADHD. These children experience pattern of social rejection that remains with them for at last 12 years. The distress caused by poor social skills associated with ADHD affects the children themselves as well as their parents.

As Ross and Ross (1976) note even when the child with ADHD shows adequate prosocial behaviour, they still elicit rejection and avoidance by peers. This can be a very confusing picture for the child with ADHD, who is attempting to learn appropriate social skills. By late childhood, it is common to find many children with ADHD developing feelings of low self-esteem about their academic and social abilities.

By later childhood and preadolescence, these pattern of academic, familial and social conflicts will have been well established for many ADHD children. Between 7 and 10 years of age at least 30 to 50% are likely to develop symptoms of conduct disorder (CD) and antisocial behaviours. The most common among these are lying, petty thievery, and resistance to authority. At least 25% may have problems with fighting with other children. The majority of children with ADHD (60 to 80%) by this time will have been placed on a trial of stimulant medication, and over half will have participated in some type of individual and family therapy (Barkley, 1990).

The child's sense of competence and self esteem are especially at risk during the elementary school because he or she may not perform well compared to peers. As noted earlier children with ADHD have problems in taking turns, following instructions, abiding by rules and distractibility. Difficulties in maintaining positive peer interaction are viewed by adults and peers as permanent characteristics. Assessment of ADHD must include (i) attributions for troubles, (ii) self-esteem and (iii) social competence.

It is important to highlight here that a diversity of treatments have been applied to ADHD. Medication with stimulants, behavioural techniques, and cognitive behavioural methods are used most often at this time. It is considered that ADHD treatment should be multi-modal since the troublesome behaviours of ADHD occur in multiple settings and comorbidity with ODD, CD and learning disability is common. (NHMRC,1995). A specific multi-modal treatment program should be individualised for each child, meaning that treatment may change from child to child in order to ameliorate primary symptoms as well as secondary symptoms, including self-esteem.

Psychostimulant medication is a very popular and well known treatment for children with ADHD. Most children are medicated primarily with Ritalin or its generic form, methylphenidate in order to manage ADHD. In Australia about 600,000 children per year receive medication. Interestingly 1% and 2% of the school-age population are medicated (Safer & Krager, 1983 cited by Barkley 1990). About 75% of ADHD children treated with stimulants display dramatic improvements in behaviour, academic performance, cognitive processing, and socialisation (Jarman, 1996; Kelly et al., 1989).

In 1937, Bradley first reported the treatment of behaviour disordered children with stimulant medication (Zemetkin & Rapoport, 1987). Since then, more than 20 pharmacological agents have been employed with ADHD children, but it seems that stimulant medications have not proven to be complete successful as sole form of treatment (Wicks & Israel, 1991). There is evidence that medication induces a short-term enhancement of behavioural, academic and social functioning in many of the children with ADHD (Barkley , 1990).

Debates continues about the use of stimulants as treatment for ADHD. It seems that for many children stimulants fail to alleviate primary deficits of ADHD. Research indicates that about 75 percent of medicated ADHD children demonstrated increased attention and reduced impulsivity and activity level. (Dulcan, 1986; Tannock, Schachar, Carr, Chajzk, & Logan, 1989; Wicks & Israel, 1991). Stimulants also tend to reduce children's disruptive, noncompliant, and oppositional behaviours (Dulcan, 1986; Hinshaw, Henker, Whalen, Erhardt & Dunnington, 1989; Whalen, Henker, & Granger, 1990).

Spencer et al., (1996) document that stimulants not only reduce negative behaviours of ADHD, but also increases positive aspects such as self-esteem, cognition, social and family functions.

Interestingly, parents and teachers respond more positively and tend to use fewer controlling behaviours with hyperactive children who are currently taking medication (Barkley 1990; Whalen, Henker & Dotemoto, 1980). There is also research to show that children with ADHD are rated more positively by peers following medically related improvements (Whalen, Henker, Buhrmester, Hinshaw, Huber, & Laski, 1989). These findings indicate that medication may not only benefit children directly, but through improved social relationships which in turn has a positive effect on self-concept (Wicks & Israel, 1991).

Stimulant medications are not the only treatment for ADHD and should not be used to the exclusion of other methods of intervention. Other therapies focusing on the social, psychological, educational, and physical perspectives are necessary. Medication does not teach a child skills but rather it alters the probability that they will behave in the same way as they did before medication. New behaviours need to be learned in order for the child with ADHD to experience increased social acceptability and enhancement of self-esteem. (Barkley 1990; Bender, 1997).

In conclusion it is very important to consider formal individual psychotherapy, using cognitive-behavioural therapy techniques and self-esteem building exercises in order to improve and correct low self-esteem. ADHD children are at risk if they do not receive

adequate consideration and treatment. Self-esteem should be considered as one of the central issues of treatment in ADHD children.

1.7.1 Secondary Symptoms and its Association with Self-esteem on Children with ADHD

The behaviours identified as primary symptoms have been the main focus for treatment of ADHD. The children can also experience additional problems including, encopresis, enuresis, chronic health problems, depression, low self-esteem, boredom and frustration with school, fears of learning new things, impaired relations, occasionally drugs and alcohol abuse, stealing as well as violent behaviour (Hallowel & Ratey, 1996; Dulcan, 1989 cited by Wicks & Israel, 1991). More consistently found than these, however, are academic problems and conduct disorder, and social difficulties. These secondary symptoms are difficult to treat and are found to develop in the wake of the primary syndrome.

As noted earlier ADHD is a chronic disorder affecting the child's home, school, and community life. The primary symptoms associated with developmental delays and increased motor activity tend to diminish over time while the attentional deficits do not diminish. Another major source of concerns are the secondary symptoms of learning difficulties, behavioural problems, lack of peer acceptance, and low self-esteem which tend to be resistant to change. An often frustrating and perplexing characteristic of the disorder is its marked variability over time, across situations, and within the same child in similar situations.

1.7.1.1 Academic Performance, Learning Disabilities and The Effects on Self-esteem on Children and Adolescents with ADHD.

Data about the performance of ADHD children on general intelligence tests proposes that many children with high I.Q will drop into the normal range. In another group of children academic deficits are noted, particularly when nervous system dysfunction or learning problems are apparent (August and Garfinkel, 1989; Weiss and Hechtman, 1986).

Children with ADHD are inclined to be behind their peer and siblings in intellectual development. Usually these children obtain an average of 7 to 15 points below control groups on standardised intelligence tests. (Prior, 1996; Barkley, 1990; McGee, Williams, Moffitt, & Anderson, 1989; Cantwell, 1986; Cantwell & Satterfield, 1978). It is unclear whether these differences in scores indicate genuine differences in intelligence or whether it is the result of an inablity to mantain task focus. Between 23 to 35 percent of these children will repeat at least one grade before reaching high school (Barkley, 1991; Milich & Loney 1979; Weiss & Hetchman, 1986).

Academic failure is common as indicated by achievement tests scores, school grades, failure to get promoted in school, and placement in special education (Dulcan, 1989 cited by Wicks & Israel, 1991). This is thought to be the outcome of their inattentive, impulsive and restless behaviour in the classroom. Support for this interpretation comes from many studies showing that stimulant medication provides notable improvement in self-esteem, academic productivity and accuracy. (Barkley 1977a, Pelham; Henker & Dotemoto, 1980; Charles & Schain, 1981; Cohen & Thompson, 1982; Bender, Caddell, Boot, & Moorer, 1985; Cunningham, Siegel, & Offord, 1985; Pelham, Sturgess & Haza, 1987; Zemetkin & Rapoport, 1987; Kelly, et al., 1989; Barkley, 1990; Alston et al., 1992; DuPaul & Rapport, 1993; Alston et al., 1993; Spencer, et al., 1996; Jarman, 1996). Shaywitz & Shaywitz (1988) and Whalen (1989) also suggest that ADHD children display learning disabilities and perform less well than would be expected from their general intelligence. Estimates of the percentage of ADHD children who have

learning disabilities vary greatly from 9 to 92 percent depending on differences between the samples as well as on varying criteria for the two disorders.

McGee and Share, (1988) cited by Wicks & Israel, 1991 and Barkley, 1990) consider that the relationship between ADHD and academic failure is well established although the reasons for the connection are not clear. In some cases core deficits in attention and impulsivity may interfere with learning (See figure 2). In other cases, learning problems may produce a number of behavioural problems such as inattention/impulsivity, low motivation and low self-concept, aggression and other externalising behaviours. On the other hand, behavioural and learning deficits may take place simultaneously yet independently, due to common biological or environmental factors (Wicks & Israel, 1991).

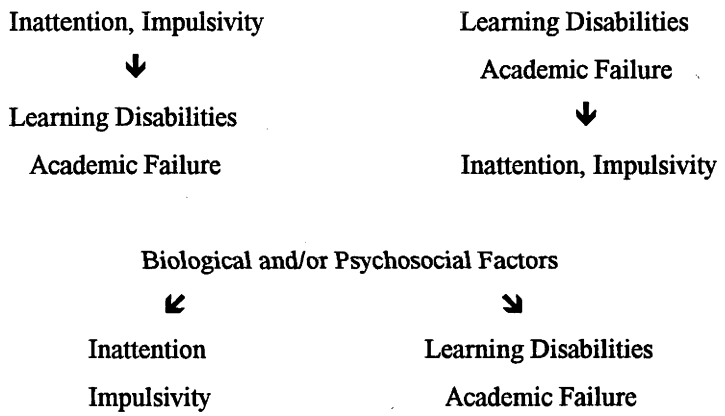

Figure 2: Possible initial causal links between ADHD and academic failure.

Current investigation into cognitive functioning and ADHD may provide explanations about academic difficulties. Deficits in processing information become greater or more noticeable when the task is complex. (Benezra & Douglas, 1983). It is not clear whether cognitive deficits define ADHD or simply contribute to academic failure. (McGee and Share, 1988 cited by Wicks & Israel, 1991). What it is clear is that academic problems in children with ADHD provide the conditions for long-lasting problems affecting many of the areas of their lives, including social relationships, academic and professional achievement, tolerance of frustration and failure and self-esteem (Brooks, 1994).

Children with ADHD and learning disabilities are vulnerable to increased psychological difficulties in three areas: self-esteem, self-control, and frustration tolerance. Family type has an influence on the child's ability to manage the disorder on psychological reactions (Zieger & Holden, 1988).

Bramer (1996) reported that college students with ADHD had serious difficulties in concentrating and also had reduced self-esteem. Slowmkowski et al., (1995) looked at whether ADHD children suffer from low self-esteem as adolescents and whether ADHD children exhibit a positive illusory bias. They studied the relationship between low self-esteem and poor functioning in adolescence and between low self-esteem in adolescence and poor functioning in adulthood. ADHD subjects reported lower self-esteem in adolescence, were judged by clinicians to have lower levels of overall adjustment in adolescence, and had lower educational achievement and occupational rank in adulthood.

Barkley (1990) also points out that over time, teachers may become more negative in their interactions with their students with ADHD. Although the impact of these negative interactions on long term functioning is not well recognised, such interactions may further aggravate academic and social achievements, reduce the students' motivation and self-esteem, and subsequently end in school failure.

Villar and Polaino (1994) evaluated differences in self-esteem and causal attribution levels in a sample of children (age 7-10yrs) with ADHD, and normal children and hyperactive depressed control children. Results show that in the ADHD group the self-esteem levels were lower than in the control groups. The ADHD group showed a tendency toward attributing good and bad marks to external forces, although this effect filed to reach significance.

In summary children with ADHD and learning disabilities are at risk of developing problems affecting their social relationships, academic success, and self-esteem. Children with ADHD display multiple attentional and behavioural problems that are reflected in school performance. It is not unexpected that these children experience recurrent

academic problems and learning difficulties which may affect their self-esteem in a significant manner.

1.7.1.2 Conduct Disorder, Social Problems and Family Problems Associated with Self-esteem on Children with ADHD.

Misconduct and social problems are reported in a high percentages of children with ADHD and adolescents with ADHD, often in the 80 percent range (Safer and Allend, 1976; Whalen and Henker, 1985). Such difficult behaviour may be more likely to lead adults to seek professional help than their primary problems would do (Wicks & Israel, 1991). Barkley (1990) affirms that troblesome behaviours are more serious in children with ADHD than in children without such a disorder. Children with ADHD also display more acute antisocial behaviours, and lower self-esteem than do normal children. Many researchers (Johnston, Pelham, & Murphy, 1985; Milich & Landau, 1982; Barkley, 1990; Grizenko et al., 1993) have found that hyperactive children are significantly more aggressive, disruptive, domineering, intrusive, noisy and socially rejected than normal children, particularly if they are male hyperactives and tend to have lower self-esteem than female hyperactives.

Some investigators have expressed the belief that ADHD and CD were quite similar disorders (Shapiro & Grafinkel, 1986; Stewart, Cummings, Singer, & deBlois, 1981), however more advanced research argued that relatively few cases of both can be detected and these disorders are likely to have different correlates and outcomes.

Children with ADHD interpret and judge social situations differently than non ADHD children. Their behaviour is not understood by others. Peers' view of children with ADHD is seen as problematic, noisy, sad, and unhappy. Subsequently, they tend to dislike and repel the child with ADHD (Flicek & Landau, 1985; Pope, Bierman, and Mumna, 1987). These kinds of behaviour are seen to affect self-esteem of children with ADHD in a substantial way. Interestingly, the behaviour of children with ADHD has also been noted to affect the behaviour of siblings. Siblings who have a hyperactive

brother or sister tend to display more negative behaviour than children without hyperactive siblings (Mash & Jonhston, 1983 cited by Wicks & Israel, 1991).

In looking at all of the behaviours that characterise ADHD, the disorder is conceptualised as a deficit in the regulation of behaviour by its consequences. Barkley (1989, 1987), and Wicks & Israel, (1991) indicate that there is a greater requirement for arousal, a higher threshold for reinforcement or underactivity in the inhibitory system. These deficits may interfere with the regulation of behaviour by reinforcement and punishment. It seems that ADHD children require greater reinforcement to maintain responses or greater punishment to inhibit action. These regulatory problems then affect academic learning, rule adherence, social interactions and relationships.

In a study by Stewart and Buggey (1994) eight third grade children with ADHD were compared with non ADHD control group in terms of the effects of perceived negative feedback received from peers. All children selected their three most-liked and least-liked friends and filled out the Coopersmith Self-esteem inventory. Results showed that the only social status variable having a significant effect on self-esteem was "positive nominations". These findings indicate that some children with ADHD may focus more on positive nominations than negative nominations, which suggests an inability to read social cues when they act in negative ways.

Self-esteem has been found to be an important aspect of the social development of children with ADHD (Gregg-Soleil, 1996). It is associated with learning difficulties (Grizenko, Papineau and Sayegh, 1993) appropriate social interactions (Towoey & Emery, 1997), and parental factors (Johnson, 1996). Parental factors have a large effect on self-esteem of their offspring. These include the social and psychiatric problems of parents (Barkley, 1990; and Cohen and Thompson, 1982; McGee, Williams, & Silva, 1984b; Revees, Werry, Elkind, & Zametkin, 1987; Szatmari et al., 1989b), parental self-esteem and functioning (Anastopolus et al., 1993), parental conflict (Cohen and Thompson, 1982) and parental style (Anastopolus et al., 1993).

Sex differences have been shown in children with ADHD. Girls are thought to display lower levels of inattention, internalising behaviours, and peer aggression than boys

(Gaub & Carlson, 1977). Although these differences were seen in non-referred populations, and not in clinically referred groups, there is sufficient doubt about the methodological adequacy of the available literature to warrant further investigations.

In summary hyperactive children are significantly more aggressive, disruptive, and socially rejected than children without ADHD. Children with ADHD interpret and judge social situations differently than non ADHD children. Their behaviour is not understood by others. Their behaviour affect their self-esteem has a significant impact on the families and social environment of the children with ADHD.

1.7.1.3 Emotional Disturbances And Impact in the Self-esteem on Children and Adolescents with ADHD.

Szamari, Offord, & Boyle 1989a cited by Barkley (1990) suggest that comorbidity of ADHD with other behavioural and emotional disorders is common. Up to 44% of children with ADHD have at least one other psychiatric disorder, 32% have two others, and 11% have at least three other disorders.

ADHD children are considered as having more symptoms of anxiety, depression, and low self-esteem than normal children or children with learning disabilities (LD) who do not have ADHD (Bohline, 1985; Breen & Barkley, 1983, 1984; Barkley, 1990; Weiss, Hechtman & Perlman, 1978). This is clearly indicated in the figure 3 which shows the typical profile of 26 hyperactive and 26 normal children on the Personality Inventory for Children (Breen & Barkley, 1983 cited by Barkley, 1990).

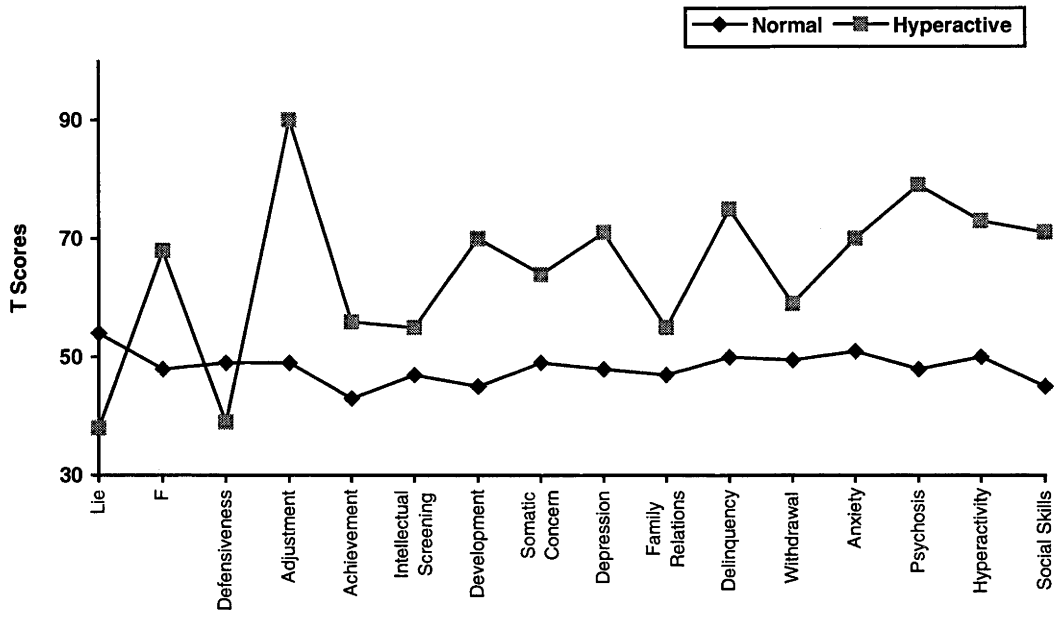

Figure 3: The profile of T scores for 26 hyperactive and 26 normal boys on the Personality Inventory for Children. From "Attention Deficit Hyperactivity Disorder" by Barkley, 1990, p.82.

This high incident of emotional symptoms in ADHD children demonstrates that perhaps these children are more likely to meet full criteria for a diagnosis of other affective or mood disorders. However research is discrepant on this matter. One investigation suggested 32% of children with ADHD had a significant affective disorder and 27% found criteria for anxiety disorder (Munir et al., 1987).

On the other hand, Biederman et al., (1992) argued that little is known about the comorbidity of this disorder with disorders other than CD. They also found that the literature supports considerable comorbidity of ADHD with conduct disorder, anxiety disorders, learning disabilities, and others disorders such as mental retardation, Tourette's syndrome, and borderline personality disorder. Subgroups of children with ADHD might be delineated on the basis of the disorder's comorbidity with other disorders. They concluded that these subgroups may have differing risk factors, clinical courses, and pharmacological responses. Thus, their proper identification may lead to refinements in preventive and treatment strategies.

Szatmari et al., (1989) cited by Barkley (1990) in their epidemiological survey, revealed that 17% of girls and 21% of boys with ADHD within fourthe four to eleven age group had at least one neurotic symptom. Interestingly, this percentage increased to 24% for boys and 50% for girls during the adolescent years. Other studies showed little incidence of these disorders in ADHD children who were followed into adolescents and young adulthood (Gittelman, Mannuzza, Shenker, & Bonagura, 1985; Weiss & Hetchman, 1986; Livingston et al., 1990; Biederman & et al., 1997).

An interesting study longitudinal was able to review data of 986 subjects from time of birth to 15 years. The authors carried out interviews and looked at parent and child reports. Symptomatology in the for anxiety disorders, mood disorders, conduct/oppositional disorders, ADHD, and substance abuse dependence was observed. Approximately 25% of children met criteria for at least one DSM-III-R diagnoses. Rates of disorder were higher for girls than for boys. Higher rates of anxiety and mood disorders among girls were founded. There were also strong tendencies for disruptive behaviour and substance use disorders to cluster together. Tendencies for anxiety and mood disorders were found to be comorbid with each other and correlated with any help seeking Fergusson et al., (1993).

Some researchers argue that stimulants may also lead to negative mood. Several studies have suggested medicated children to be more dysphoric, less happy and have lower self-esteem than children treated with placebo (Whalen, Henke, Buhrmeister, Hinshaw, Huber & Laski, 1989; Barkley 1977b cited Barkley, 1990). However, it seems that these findings are inconclusive. Emotional interaction in children with ADHD is one of the most difficult and confusing aspects of the disorder for parents. Infants with ADHD are often hard to comfort or satisfy, leading parents to feel inadequate. As the child grows, and the behaviours associated with the disorder are continuous. Parents begin to feel guilty, believing they have done something wrong to make their child this way. They also feel angry at the child who is chronically difficult to handle and who continually misbehaves (Wender, 1987 cited by Whitman & Smith, 1991; Accardo, Blondis and Whitman, 1991).

In conclusion the research regarding emotional disturbances remains controversial. Children with ADHD including those who are on medication experience negative mood changes that relate closely to self-esteem (e.g, sadness, irritability, disinterest and anxiety).

1.8 AETIOLOGY

Many theories about the causes of ADHD have arisen across the years, however only lately has solid evidence become accessible on the aetiology of this disorder. The search for causes of ADHD encompasses many variables, many of which are biological or thought to affect biological functioning. Most of the research is correlational in nature and therefore not able to provide evidence of causality. (Barkley, 1990; Wicks & Israel, 1991; Barlow & Durand, 1995).

Barkley (1990) points out that one of the difficulties with attributing cause-effect relationships is the potential impact of genetic factors underlying ADHD. Data for a genetic predisposition has been shown in twin studies (Cunningham & Barkley, 1978; Gilger, Penington, & DeFries,1992; Goodman & Steveson,1989) as well in family studies (Wicks & Israel, 1991). It is estimated that 20-32% of parents and siblings of children with ADHD also have other disorders (Lahey et al., 1988, Biederman et al.,1986; Biederman, Faraone, Keenan, & Tsuang, 1991).

A small number of adoption studies indicate some genetic transmission (Heffron, Martin, & Welsh, 1984; Deust, 1989). Clear conclusions about causality of ADHD are difficult because of restrictions and limitations in the research (Rutter et al., 1990b; Bender, 1997).

Research related to neurobiological, neurochemical and neurophysiological basis of ADHD has taken a variety of theoretical approaches (Hynd, Hern, Voeller, & Marshall, 1991). For example, brain damage possibly from brain infections, trauma or other injuries or complications during pregnancy or time of delivery was originally suggested

as the fundamental cause of ADHD symptoms (Holsworth & Whitmore, 1974; Bryan & Bryan, 1975; Cruikshank, Eliason, & Merrifield, 1988; Kesler, 1980). The idea that ADHD is traceable to pregnancy and birth complications has not obtained strong support. (Anastopoulos & Barkley, 1988; Goodman and Stevenson, 1989; Whalen, 1989; Sprinch-Buckminster, Biederman, Milberger, Faraone, & Lehaman, 1993). Recent progress in studying the central nervous system suggest some kind of brain dysfunction may exist in ADHD. There is a notable interest in the frontal and frontal-limbic areas. ADHD children have been found to have both reduced blood flow and decreased EEG activation in the frontal lobes, and parents of ADHD children who themselves displayed ADHD behaviours had lowered metabolism in the frontal area. (Anastopoulos & Barkley, 1988; Zametkin and Rapoport, 1986; Zametkin, 1990; Mann, Lubar, Zimmerman, Miller, & Muenchen, 1992; Amen, Paldi & Thisted, 1993; Hinshaw, 1994). Analysis of data from MRI scans of children with ADHD have found these children to have smaller corpus callosum in the anterior region (genu), the posterior region (splenium) and the area anterior to the splenium than shown by scans of non-ADHD children (Hynd, Semrud-Clikeman et al., 1991). Helman et al., (1991); Voeller (1986) and Voeller & Heilman, (1988) have found evidence of right hemisphere dysfunction in the children with ADHD.

It has generally been approved that the catecholamines (e.g. dopamine, norepinephrine) are involved in ADHD and affect a wide type of behaviours, along with attention, inhibition, and response of the motor system, and motivation (Rapoport, Buchsbaum, Zahn, Weingartner, Ludlow, & Mikkelsen, 1978; Clark, Geffen, & Geffen, 1987a, 1987b). Evidence indicates reduction of brain dopamine in ADHD children (Raskin, Shaywitz, Shaywitz Anderson, & Cohen, 1984).

Some studies have found that several factors during pregnancy and child birth may end in reduction of oxygen to the brain (e.g. anoxia), which has been correlated with the occurrence of ADHD (Barkley, DuPaul, & McMurray, 1990; Nichols & Cohen, 1981; Sprinch-Buckminster et al., 1993).

Environmental agents and diet seem to play an important role in the aetiology of ADHD (Harley & Matthews, 1980). However, other research fails to support the role of food additives in ADHD (Levy et al., 1978; Conners, 1980; Kavale & Furness, 1983).

Feingold (1975), Prinz, Roberts, and Hantman,(1980) stated that food containing artificial dyes and flavours, sugar, certain preservatives, and asylicates was correlated to hyperactivity. More recent research, found no support and substantiation for the above hypotheses (Conners, 1980; Wolraich, Milich, Stumbo, & Schultz , 1985; Wolraich et al., 1985). Similarly, food allergies were considered at first by Marshall (1989) and Barkley, (1982), but further research found no association between allergies and atopic disorders and ADHD in children (McGee, Stanton & Sears, 1993).

In conclusion the research into dietary effect is inconsistent. Correlational studies can be misleading, and well-controlled experiments are not easy to conduct. Given these considerations, the data suggests that diet does not play an influential role in the aetiology of hyperactivity but may influence a small number of children (Bender, 1997; Wicks & Israel, 1991).

The psychosocial and environmental factors as a cause of ADHD has been researched but there is not much evidence that ADHD is the result of social or environmental factors (Barkley 1990; Bender, 1997). Barkley (1990) points out that a few environmental theories of ADHD have been suggested but have not received much support.

The connection with family adversity and social class has been found in other studies (e.g. Campbell et al., 1986; Rutter, 1989b; Goodman and Stevenson, 1989). Nevertheless, it does not seem to be very strong in the available literature. The studies indicate that the overly critical, commanding and negative behaviour of mothers of hyperactive children is most likely a response to the disruptive, and non-compliant behaviour of these children rather than a cause of it (Barkley, 1990).

In summary many researchers support a biological predisposition to the disorder in which a variety of neurological aetiologies (e.g. pregnancy and birth complications,

acquired brain damage, toxins, heredity) can intensify the disorder through some disorder in a final common pathway in the nervous system. It appears that hereditary factors play a very important role in ADHD. (Barkley, 1990). Neurological studies are converging on the evidence that a dysfunction in the orbital-limbic pathways of the frontal area is the probable impairment that arise to the primary factors of ADHD. The condition may be aggravated by pregnancy complications, exposure to toxins, andor neurological ailment may be exacebated by social factors.

1.9 SUMMARY, CONCLUSIONS AND INTRODUCTION TO HYPOTHESES

An examination of the research literature in the field of ADHD in children has been reviewed and examined. The hypotheses established here are proposed as a result of the lack of research in the field of self-esteem in children with ADHD. It seems that the research has been more often concerned with primary symptoms rather than the secondary symptoms. The secondary symptoms appear to be most difficult to treat and they have been less widely recognised. They include low self-esteem, depression, boredom and frustration with school, fears of learning new things, and impaired social relations.

As it is noted above there are several possible causes of low self-esteem in children with ADHD. The causes may differ from child to child. In some cases it could be assumed that the core deficits of attention and impulsivity may interfere with self-esteem. Nevertheless, it may be true that other children with ADHD, with learning problems and school failure may also have behavioural problems such as inattention, impulsivity, low motivation, poor self-concept,and aggression. It may be that behaviour problems and learning deficits occur simultaneously but more or less independently due to common biological or environmental factors.

Children with ADHD are rated as having more symptoms of anxiety, depression, emotional disturbances, aggressiveness, social rejection and low self-esteem than normal children (Bohline, 1985; Breen & Barkley, 1983, 1984; Barkley, 1990; Milich &

Landau, 1982). Given this rating we propose that children with ADHD will experience higher incidence of anxiety, depression, mood disorders and low self-esteem. Interestingly as Szatmari et al.,(1989a) found in their epidemiological survey, that girls (17%) and boys (21%) with ADHD between 4 and 11 years of age had neurotic disorders related to anxiety.

It is expected that the ADHD children will meet criteria for anxiety and depression disorder as indicative of low self-esteem. The variable gender appears to be important, indicating that the boys (in a normal population) tend to deny significantly more feelings of anxiety and depression Piers and Harris (1969) than girls. It also seems that more boys than girls consistently receive the diagnosis of ADHD with the ratio of six to nine boys to one girl in clinical samples (Wick & Israel, 1991). So, gender may be a factor in the the occurrence of ADHD.

As noted above treatment in a variety of settings with stimulant medication also improves the quality of social interactions between children with ADHD and their parents, teachers, as well as peers and across a diversity of situations. This improvement is reflected in the scores related to self-esteem. Stimulant medications not only seem to alter the behaviour of children with ADHD but also indirectly affects the behaviours of important adults and peers toward these children. However, stimulants may also lead to negative mood. Studies have found medicated children to be more dysphoric and less happy than children treated with placebo. Although not addressed in the present study this is an issue that requires future investigation.

1.9.1 HYPOTHESES

1. Children with ADHD suffer from lower self-esteem compared with children without ADHD using global measure of the Piers-Harris Children's Self-Concept Scale "The Way I Feel About Myself".

2. It is predicted that children with ADHD will have a higher occurrence of psychological distress.

3. Boys with ADHD will display lower self-esteem in comparison with the girls with ADHD.

4. It is expected that younger children with ADHD will have higher self-esteem scores than older children with ADHD.

CHAPTER 2: METHOD

2.1 DESIGN

This study includes both a clinical and control groups. Data is collected by means of questionnaires relating to self-esteem, behaviour problems and psychological distress. The design is cross-sectional in nature and non-experimental. The study group comprises subjects with a diagnosis of Attention Deficit Hyperactivity Disorder (ADHD).

2.2 SUBJECTS

Forty one children with ADHD participated in the study and one hundred and fifty seven children without ADHD. The ADHD children were participants in the ADHD children parents association from Sydney, Melbourne, and Canberra as well as three Canberra Primary schools. ADHD children were screened for ADHD based upon parents who answered if the child had been diagnosed by paediatricians, general practitioners, psychiatrists and psychologists (8 girls, 19.5% and 34 boys, 80.5%).

The normative sample (68 boys, 43.3% & 89 girls, 56.7%) was randomly selected from four primary schools of the ACT. The staff and school psychologists referred these children as "normal". All subjects were ranging in age from 9-12 years old. The parent(s) or guardian(s) provided written consent for the child to participate in the study.

2.3 PROCEDURE

Initially the author contacted the three ADHD children parents association from three major cities of Australia: Sydney, Melbourne and Canberra, through a letter which circulated to all parents of the association asking for volunteers to participate in this research.

All of the ADHD children were asked to complete a questionnaire (The Piers-Harris Children's Self-concept Scale "The Way I Feel about Myself", see Appendix 3). Some were sent through the postal service (90.5%) and asked to return the completed questionnaire via a postage paid envelope. The others (9.5%) of children completed questionnaires during a school session. Written consent was obtained from the ADHD parents association, school administration, class teachers, parents and students (see Appendix 4).

Additional information was gathered about all the ADHD subjects concerning (i) type of professional who made the diagnosis, (ii) medication, type and dosage details, (iii) parental report of attention problems by using the Child Behavioural Check List (CBCL) (see Appendix 5).

The normative sample was asked to complete the questionnaire during a school session with classroom teachers supervising questionnaire distribution and collection.

2.4 MEASURES

2.4.1 The Piers-Harris Children's Self-Concept Scale: "The Way I Feel About Myself"

Self-esteem was measured using overall Self-esteem from the Piers-Harris Children's Self-concept Scale "The way I feel About Myself". This self-report scale, intended for

children aged 8-18 years, consists of 80 first-person declarative statements to be answered Yes or No. There are six factorially established subscales which are labelled as follows:

I. Behaviour
II. Intellectual, and School Status
III. Physical Appearance and Attributes
IV. Anxiety
V. Popularity and
VI. Happiness and Satisfaction

Three subscales of the Piers-Harris Children's Self-Concept Scale can be seen as measures of psychological distress, the Anxiety (IV), Happiness and Satisfaction (VI) and Behaviour (I). These scales represent areas of importance to most respondents, warranting their inclusion in overall self evaluation.

Piers and Harris argued (1969) that the scale pertinent to self-concept defined as a *"relatively stable set of self-attitudes reflecting both a description and an evaluation of one's own behaviour and attributes"* p. 23 cited by Hattie (1992). *"The self-concept has both global and specific components, and the importance of each area determines the degree to which success and failure affect overall self evaluation"* (Piers, 1984 cited by Wylie, 1989. p. 9).

According to the manual, the **Behaviour Scale** reflects the extent to which the child admits or denies problematic behaviour. **Intellectual and School Status** relates to the child's self-assessment of his or her abilities, his or her satisfaction with school, and his or her future expectations of self. Ten of these items relate to self-estimates of ability but there is one item in the scale that is clearly associated with the family and not the school ("I am an important member of my family").

The **Physical Appearance and Attribute Scale** indicates the child's attitudes to his or her physical characteristics, to leadership qualities, and to the ability to express ideas. The **Anxiety** scale evaluates general emotional disturbance and mood. **The Popularity Scale** comprises items relating to class popularity, being chosen for games, and

friendship. **Happiness and Satisfaction** involves emotional self-concept or feelings such as sad, lucky, happy, and cheerful.

The test takes 30 minutes to administer. The readability is approximately focused at the third grade level. Scoring is simply a count of the appropriate responses, and tables are presenting for converting raw scores to percentiles, T-scores, and stanines (see Appendix 6).

The Piers-Harris has been extensively employed with primary school children and as a consequence, there is much psychometric data available. It appears that the standardisation sample lacks generalisation but this deficiency is rectified by various researchers such a Hattie (1992). There are no age or sex differences on the scales, and the consistency and stability estimates of reliability are quite objective (Hattie, 1992 & Wylie, 1989). Reliability and validity of the scale has been established (Hattie, 1992, Piers and Harris 1969, 1984 & Wylie, 1989).

2.4.2 The subscale Attentional Problems from the Child Behaviour Check List (CBCL)

The Child Behaviour Child list (CBCL) is believed to represent one of the advances in the tool of assessment in the 1980's. It is extensively accepted in research on child psychopathology in general, including ADHD (Barkley, 1991; Achenbach & Eldelbrock, 1983, 1986, 1991).

The Child Behaviour Checklist assesses how the child has adjusted to the environment rather than personality structure or the organisation of the underlying processes that direct behaviour. The CBCL 1991 does not categorise children on the basis of a specific syndrome, but instead has been used to generate a taxonomy of behaviours (Achenbach & Eldelbrock, 1991). In the present research only the Attention Problems Scales, from the Parents' Report Form was used.

2.4.2.1 Reliability and Validity of the CBCL

Reliability illustrates an interesting pattern. Test-retest correlations from two ratings by the same information often range from 0.80 to more than 0.90. Agreement between different raters observing the child in the same situation appears to be good, although somewhat lower than for two evaluations by the same person (Achenbach and Edelbrock, 1983, 1986 cited by Wicks-Nelson & Israel, 1991). For example, interrater reliabilities between two parents who see the child at home (0.59) or between two teachers who watch the child in school (0.64) indicated good levels of agreement.

Inter-rater reliability and test-retest reliability has been established. The CBCL has been found to differentiate between clinically referred and nonreferred children (Achenbach and Eldelbrock 1983a; Naglieri & Genshaft, 1985).

In conclusion The CBCL is a promising test for assessing behaviour problems of children and adolescents. The profile may prove to be valuable for describing children's behaviour in a compact but a comprehensive and significant manner in a short amount of time. The power of the profile is that it differentiates among children who may benefit from different kinds of treatment but its shortcoming is a limited norm sample.

CHAPTER 3: RESULTS

3.1 INTRODUCTION

The analysis of the data will be presented in the following sections:

(i) the data screening procedure;

(ii) the group differences in self-esteem (Overall and subscales); and

(iii) multiple regression analysis related to age among the groups.

3.2 DATA SCREENING

All data was analysed using a program called SPSS for Windows Release 6.1. Various procedures were used to check for the accuracy of data entry, missing values and assumptions required for t-tests and multiple regression.

The variables were examined separately for the two groups, the ADHD group and non ADHD group. Cases with missing data were excluded.

Distributions of variables within each group where checked for normality. Levels of skewness and kurtosis were examined and were acceptable ($p<0.01$) for all variables.

The distributions of variables were checked separately for each group using SPSS histograms and normal distribution plots to check if there were any outliers. No univariate outliers were detected by using procedures suggested by Tabachnick and Fidell (1989).

Regression analysis was conducted on the two groups in order to identify multivariate outliers, by using Mahalanobis distance with $p<0.001$. There were no multivariate outliers. 41 ADHD cases, and 157 non-ADHD cases remained for the statistical analysis.

3.2.1 Sample Profile

Table 2

Mean and Standard Deviation Age Among ADHD Children And non-ADHD Children

Age	ADHD Children n = 41	Non-ADHD Children n= 157	Total
Mean	10.59	10.59	10.59
Standard Deviation	1.40	0.86	1.13
Minimum	8	8	8
Maximum	13	12	13

N= 198

As the table 2 shows the age of the subjects who participated in the study is eleven years old.

Table 3

Gender Distribution between ADHD and non-ADHD Children

	ADHD Children		Non-ADHD Children		Total	
	Cases	Percent	Cases	Percent	Cases	Percent
Male	33	80.48	68	43.3	101	51
Female	8	19.51	89	56.7	97	49
Total	41	100	157	100	198	100

The clinical sample had more male (80.48%) than female subjects(19.51%). The non-ADHD subjects tend to have a more equal distributed between males (43.3%) and females (56.7%).

Table 4

Grade Distribution between ADHD and non-ADHD Children

	ADHD Children		Non-ADHD Children		Total	
Grade	**Cases**	**Percent**	**Cases**	**Percent**	**Cases**	**Percent**
1	2	4.9			2	1.0
2	3	7.3			3	1.5
3	3	7.3			3	1.5
4	6	14.6	20	12.7	26	13.13
5	6	14.6	74	47.1	80	40.40
6	7	17.0	63	40.1	70	35.35
7	11	26.8			11	
8	1	2.43			1	
Missing	2	4.9			2	
Total	41	100	157	100	198	100

The clinical sample tended to have a less equal distribution between the grades than the non-ADHD group. 75.75% of the non-ADHD children are in years 4, 5 and 6.

3.2.2 Description of Information Collected on the ADHD children

The ADHD sample was examined to obtain descriptive information related to length and type of medication, the professional who diagnosed ADHD, and the symptoms given in the subscale Attention Problem from the Child Behaviour Checklist.

3.2.2.1 Medication ADHD Group

ADHD subjects were surveyed about medication. All subjects indicated that they were or had been under medication. 33 subjects (80.48%) indicated being under medication at the current time.

Table 5

Current Medication on the ADHD Sample

	Frequency	Percent
No	7	17.07
Yes	33	80.48
Missing	1	2.43
Total	41	100

Length on medication:

Clinical subjects were asked to indicate the length of time they had been on medication. 39 percent of the sample reported being on medication for a period of two to four years. Mean length of time on medication was 2.71 years (SD 2.00), with a minimum 0.08 and maximum of 8 years.

Table 6

Distribution of the Length of Medication for ADHD Children

Length of Time	Frequency	Percent
From 3 months to 2 years	10	24
Over 2 to 4 years	16	39
Over 4 to 6 years	6	15
Over 6 years	4	10
Missing	5	12
Total	41	100

3.2.2.2 Professional Given Diagnosis

As shown in Table 7, paediatricians (prop=0.46) and general practitioners (prop=0.31) are the professionals who more frequently diagnosed the ADHD condition.

Table 7

Distribution of the Professional ADHD Diagnosis

	Frequency	Percent
General Practitioner	13	31.0
Paediatrician	19	46.3
Psychiatrist/Psychologist	7	17.1
Other	2	4.8
Total	41	100

3.2.2.3 Type of Medication

Clinical subjects were asked to indicate the type of medication. Dexamphetamine was more prevalent than ritalin. (See table 8).

Table 8

Distribution of Type of Medication used for ADHD

Medication	Frequency	Percent
Ritalin	17	40.5
Dexamphetamine	23	54.8
Other	1	2.4
Total	41	100

3.2.2.4 Illness Symptoms (Child Behaviour Check List (CBCL) - Attention Problems Subscale) replied by parents with ADHD children

The Attention Problems subscale from the CBCL was used in order to rate the most prevalent symptoms. Table 9 lists these symptoms according to parents ratings children's symptoms. The most common symptoms were the items "Inattentive, easily distracted" (69.0%); "Has difficulty following directions" (61.9%); "Fails to carry out assigned tasks" (59.5%); and "Impulsive or acts without thinking" (59.5%).

Table 9

Percentage among Symptoms - Child Behaviour Check list-Attention Problems Scale for the ADHD Children

CBCL	Somewhat or some times true (%)	True or often true (%)
Acts too young for his/her age	28.65	52.4
Hums or makes other odd noises during class	35.7	31.0
Fails to finish things she/he starts	33.3	57.1
Can't concentrate, cant pay attention for long	42.9	52.4
Can't sit still, is restless, or hyperactive	33.3	54.8
Fidgets	33.3	54.8
Day-dreams or get lost in his/her thoughts	45.2	40.5
Has difficulty following directions	31.0	61.9
Impulsive or acts without thinking	35.7	59.5
Nervous, highly strung, or tense	45.2	35.7
Has difficulty learning	42.9	42.9
Is apathetic or unmotivated	47.6	9.5
Performing poorly at school	47.6	28.6
Poorly co-ordinated or clumsy	28.6	21.4
Messy work	40.5	45.2
Inattentive, easily distracted	21.4	69.0
Stares blankly	40.5	19.0
Underachieving, not working to his/her potential	38.1	52.4
Fails to carry out assigned tasks	33.3	59.5

3.3 SPECIFIC HYPOTHESES

The hypotheses of this present study were related to (i) group differences in self-esteem, (ii) higher emotional problems in ADHD, (iii) sex differences in Self-esteem within ADHD group and (iv) age differences in Self-esteem within the ADHD group.

3.3.1 Overall Self-esteem Measure between the ADHD and non-ADHD Group

It was expected that children with ADHD would report lower levels of self-esteem than children without ADHD.

Table 10 presents a comparison of overall self-esteem between ADHD and non-ADHD groups. The ADHD group has a low percentage compared to the non-ADHD group. The percent of non-ADHD children with low scores (< 60) was 44.5% whereas 68.3% of ADHD group scored in this range.

Table 10

Mean, Median and Distribution in Overall Self-Esteem between the ADHD and non-ADHD group

Self-esteem Overall scores	**ADHD Group**				**Non-ADHD group**			
	N	Percent	Mean	Median	N	Percent	Mean	Media
< 40	7	17.1	34.00	35	12	7.60	32.83	34
40-59	21	51.2	51.14	53	58	36.9	50.19	50
60-69	11	26.8	64.36	64	55	35.0	65.09	65
70-79	2	4.90	74.50	74.50	32	20.4	73.63	74
Total	41	100	52.90	54.00	157	100	58.85	61.00

Table 11

Means and Standard Deviation of the Overall Self-Esteem between the ADHD and non-ADHD group

Overall Self-esteem	Number of cases	Mean	Std. Deviation
ADHD group	41	52.90	11.88
Non-ADHD group	157	58.85	12.48

A t-test for unequal sample size was undertaken to check the significance of the difference between these groups, the difference was significant ($t=2.83$, $p=0.006$). These results support the hypothesis that children with ADHD will report lower self-esteem than children without ADHD.

3.3.2 Occurrence of Psychological Distress including Symptoms of Anxiety, Depression, Unhappiness

It was hypothesised that children with ADHD would have a higher occurrence of psychological distress related to anxiety, mood disorders and unhappiness. Emotional problems including depression and are usually reflected through behavioural problems. Three factors of the Piers-Harris Children's Self-Concept Scale were examined in relation to the overall Self-esteem between the groups.

3.3.2.4 Anxiety (Factor 4)

Table 12

Median, Median and Distribution of the Anxiety Subscale (The Piers-Harris Children's Self-Concept, Factor 4) between ADHD and non-ADHD

Factor 4		ADHD children		Non-ADHD children		
Score	**N**	**Percent**	**Median**	**N**	**Percent**	**Median**
0-4	3	7.3	2	11	7.1	4
5-9	18	43.9	7	71	45.8	8
10-14	20	48.8	11	73	47.1	11
Total	31	100	9	155	100	9

Table 12 shows the comparative figures for the scores on Anxiety subscale (factor 4) between children with ADHD and children without ADHD. This distribution indicates that for both groups the score is evenly distributed.

Table 13

Distribution of Scores in the Subscale Happiness and Satisfaction (The Piers-Harris Self-Concept Scale, Factor 6) between ADHD and non-ADHD Children

Factor 6		ADHD children		Non-ADHD children		
Score	**N**	**Percent**	**Median**	**N**	**Percent**	**Median**
0-4	7	17.1	4	18	11.5	3
5-9	34	82.9	8	138	88.5	8
Total	41	100	7	156	100	8

Table 13 shows a comparison between groups' scores on the subscale Happiness and Satisfaction (factor 6) between children with ADHD and children without ADHD. The results indicate that the children with ADHD (82.9%) have a similar distribution of

scores to children without ADHD (88.5%). None of the children for either groups scored above 10.

Table 14

Distribution of Scores in Behavioural Problems (The Piers-Harris Self-Concept Scale, Factor 1) among ADHD Children And non-ADHD Children

Factor 1	**ADHD children**			**Non-ADHD children**		
Score	**N**	**Percent**	**Median**	**N**	**Percent**	**Median**
0-4	3	7.30	4	3	1.90	3
5-9	12	28.3	8	10	6.40	8
10-14	16	39.0	13	37	23.60	12
15-19	10	24.4	16	107	68.20	17
Total	41	100	11	157	100	16

Table 14 shows that whereas 91.8% of non-ADHD group scores highly, only 63.4% of the ADHD group did so when comparing scores of 10 or more.

Table 15

Mean and Standard Deviation on the Subscales Anxiety, Happiness and Satisfaction, and Behavioural Problems between ADHD and non-ADHD group.

	ADHD (n = 41)		**Non-ADHD** (n =157)	
	Mean	**Std Dev**	**Mean**	**Std Dev**
Anxiety (Factor 4)	8.70	(2.90)	8.91	(2.75)
Happiness and Satisfaction (Factor 6)	6.75	(1.94)	7.17	(2.02)
Behavioural Problems (Factor 1)	11.14	(4.02)	14.78	(3.29)

Note: N= 198, * p <.05

T-tests were undertaken to check the differences in these subscales between these groups. It was found that the differences were not significant for two subscales the Anxiety ($t = 0.41, p = 0.68$), and Happiness and Satisfaction ($t = 1.23, p = 0.05$).

However, the differences between these groups for factor 1, Behavioural Problems was significant ($t=5.35, p=0.000 < 0.05$). These results suggest that ADHD subjects evaluate themselves as having more Behavioural Problems but they do not suffer higher levels of anxiety or less happiness and satisfaction.

These results partially support the hypothesis that ADHD subjects evaluate themselves as experiencing more psychological distress in comparison with children without ADHD.

3.3.3 Sex Differences

Boys with ADHD were expected to display lower self-esteem than girls with ADHD. Scores of global self-esteem and the variability of the six factors of the Piers-Harris Self-Concept scale were examined for sex differences. T-tests for unequal sample size were undertaken considering sex differences between these ADHD and non ADHD group.

Table 16

Mean and Standard Deviation on the Overall Self-Esteem and the Six Factors (The Piers-Harris Self-Concept Scale) between the Males and Females for ADHD group

	ADHD group		t-test
	Boys	**Girls**	
Overall self-esteem	53.3	51.2	.30 (ns)
	(9.89)	(18.80)	
Behavioural Problems	11.0	11.6	-.38 (ns)
	(4.09)	(3.90)	
Intellectual & School Status	12.3	12.5	-.12(ns)
	(2.80)	(4.37)	
Physical Appearance &	8.5	7.8	.55 (ns)
Attributes	(2.45)	(3.39)	
Anxiety	9.09	7.12	1.43 (ns)
	(2.60)	(3.68)	
Popularity	7.60	5.25	1.22 (ns)
	(3.08)	(5.25)	
Happiness & Satisfaction	6.93	6.00	1.04 (ns)
	(1.81)	(2.39)	

Note. N= 198 * $p<0.05$ ** $p< 0.01$, ns = not significant

Table 16 shows that when t-tests for unequal sample size were conducted there was no significant difference between boys and girls when looking at the overall self-esteem. These results failed to support the hypothesis that ADHD boys would report lower self-esteem than girls with ADHD.

The same pattern of non-significance occurred for all the six subscales (See table 16). These results fail to support the hypothesis that boys have lower scores in each of these subscales in comparison with girls with ADHD.

3.3.4 Age Differences

It was expected that self-esteem would decline with age in the ADHD group. Multiple regression analyses between the groups were compared. The regression analysis was repeated using the overall level and each of the factors in turn as the dependent variable. (See table 17)

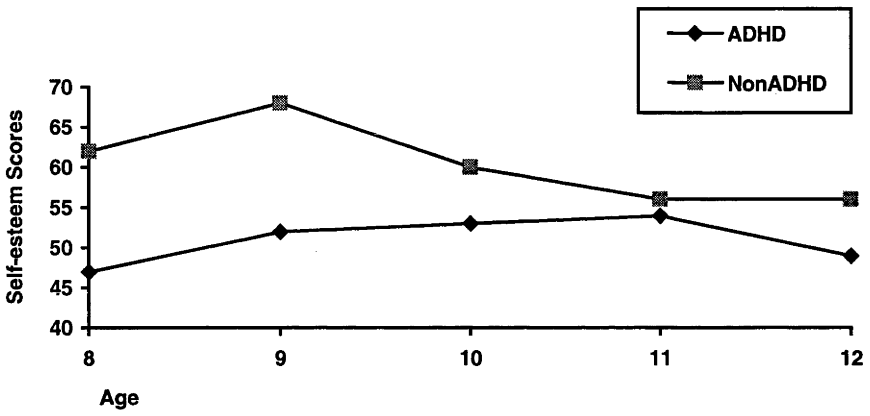

Figure 4: Differences in overall self-esteem Scores with age across groups.

The figure 4 indicates that for both groups the older children tend to report lower levels of self-esteem in comparison with the younger children.

Table 17

Estimated Regression Coefficients for Age and their Significance for ADHD and non-ADHD Group in the Overall Self-esteem and the Six factors of the Piers-Harris Self-Concept Scale

	ADHD children				Non-ADHD children						
	β_1	SEβ	t	p	β_2	SEβ	t	p	β_1-β_2	t2	p
O	-1.41	1.37	-1.02	0.31	-3.24	1.13	-2.87	0.004	1.83	0.96	0.44
F1	-0.45	0.46	-0.96	0.33	-0.63	0.29	-2.16	0.031	0.18	0.34	0.77
F2	-0.32	0.36	-0.89	0.37	-0.59	0.31	-1.8	0.059	0.27	0.56	0.63
F3	-0.43	0.29	-1.45	0.15	-0.61	0.29	-2.06	0.40	0.18	0.42	0.72
F4	0.076	0.32	0.036	0.81	-0.31	0.24	-1.31	0.19	0.23	0.96	0.44
F5	-0.14	0.41	-0.35	0.72	-0.44	0.29	-1.52	0.13	0.30	0.59	0.61
F6	-0.16	0.22	-0.74	0.46	-0.51	0.18	-2.18	0.055	0.35	1.18	0.18

O = Overall Self-esteem
F1 = Behavioural Problem
F2 = Intellectual & School Status
F3 = Physical Appearance & Attributes
F4 = Anxiety
F5 = Popularity
F6 = Happiness & Satisfaction

Table 17 presents the estimated regression coefficients and their significance for ADHD and non ADHD group at various levels. Children in the ADHD group showed no changes in Self-esteem. That is, that the self-esteem is not changing with age. It is interesting to note here that, some of the regression coefficients for non-ADHD children are significant. Namely, at the Overall self-esteem level and for factor 1 (Behavioural Problems) and factor 2 (Intellectual and School Status) the coefficients are significant. This indicates that non-ADHD younger children tend to have higher self-esteem than the older non-ADHD children. These results failed to support the hypothesis that as children grow their self-esteem decreases.

CHAPTER 4: DISCUSSION

The purpose of the present study was to examine the relationship between self-esteem in ADHD children according to sex and age. It was expected that

(i) children with ADHD would demonstrate lower global self-esteem when compared with children without ADHD,

(ii) children with ADHD would have a higher occurrence of psychological distress than children without ADHD,

(iii) boys with ADHD would reveal lower self-esteem than girls with ADHD, and

(iv) older children with ADHD would demonstrate lower self-esteem compared with younger children with ADHD.

The results of this study suggest that children with ADHD do have lower global self-esteem than children without ADHD. That is, children with ADHD reflect poor self-evaluations on their own general behaviours and personal attributes.

No significant difference was found for children with ADHD on the Anxiety and the 'Happiness & Personal Satisfaction Subscales of the Piers-Harris Self-Concept Scale. Nevertheless it was demonstrated that children with ADHD evaluated themselves as having more behavioural problems in comparison with children without ADHD.

There were no differences between boys and girls with ADHD in their overall self-esteem nor were there differences found within the subscales of the Piers-Harris Self-Concept Scale.

Additionally, no significant age differences were found for children with ADHD. However, a trend was found that suggested that older children with ADHD tended to have lower self-esteem compared with younger children with ADHD.

4.1 HYPOTHESIS 1

The results of this study show that children with ADHD have lower scores on the overall self-esteem than children without ADHD.

These results support the findings of other researchers who have concluded that poor self-esteem is a very common characteristic found in children with ADHD (Weiss, 1992; Nadeau, 1995, cited by Bender, 1997; Wender, 1987; Barkley, 1990; Hollowell & Ratey; 1994; Selikowitz, 1995; Slomkowski et al., 1995; Bender, 1997). In fact, noted earlier in the literature review these researchers assert that a low self-concept can be problematic in childhood, adolescents and adults if not properly diagnosed and treated.

These results also suggest that global self-esteem is low for children with ADHD in comparison with children without ADHD indicating discrepancies between the perceived self or self-concept and the ideal self. Self-esteem is an important component for good social and emotional adjustment in children with and without ADHD. This negative overall self-esteem reflected in the ADHD overall scores may be related to unhappiness and less effective functioning (Bender, 1997; Selikowitz, 1995; Slomkowski et al., 1995; Hollowell & Ratey, 1994).

Poor self-esteem may manifest itself by excessive moodiness, irritability, tearfulness, or withdrawal (Selikowitz, 1995; Whitman & Smith, 1991). The ratings given by ADHD parents of children with ADHD on the subscale attentional problem, indicated that they perceived their children as "nervous and highly strung or tense", "apathetic and unmotivated", and "acts too young for his/her age". In contrast, the children with ADHD rated the items "I am a happy person" and "I am cheerful" very highly. The children in this study therefore showed that they had not yet developed insight so that they were unable to identify functioning difficulties that their parents perceived so well. It could be said therefore that self-esteem problems are attenuated by the children's lack of insight at this stage.

Another explanation of the low self-esteem reflected in children with ADHD could be due to immature self-appraisal. Subsequent difficulties in developing appropriate sense

of autonomy or competence may develop. These qualities are essential for adequate sense of self-worth (Hallowell and Ratey, 1994; Selikowitz, 1995). Due to this immature appraisal system, children with ADHD are at risk of problems with self-esteem (Selikowitz, 1995). This is in part due to many difficulties in their everyday performance at school, as reflected in the items rated by parents with ADHD children such as "fails to finish things she/he starts" and "performing poorly at school". It may be also due to their problems with poor attention span, their impulsivity and poor social cognition and difficulties with learning. As these children mature and their self-appraisal becomes more accurate, it is likely for them to experience a distressing lowering of self-worth during adolescence and young adulthood.

In the normal development of adolescents, cognitive processing starts changing. Self-concept is associated with different cognitive processes (Rosenberg, 1979). The sources of confirmation and disconfirmation also change. Children without ADHD experience these kind of continuous changes and challenges; how much more difficult must it be for children with ADHD who have not developed and matured to these levels of cognitive functioning.

Another consideration in the analysis of why children with ADHD reflected low overall self-esteem may be due to different experiences of transition across school systems during this stage. Some researchers have documented decreases in self-esteem when the child changes school systems (Simmons & Blyth, 1987). For children the change in school system is a time for understanding the importance of schooling. Parental pressure to achieve becomes stronger and as a consequence the self-esteem is affected.

It is important to note that some researchers have reported self-esteem of 11 to 14 year olds with normal development to be the lowest in comparison to other age groups (Simmons, Rosenberg & Rosenberg, 1973), whereas other studies have indicated that self-esteem is lowest immediately after transition but regained during the succeeding grade (Eccles et al., 1989, Hart, 1988). This variable may be affecting the results of this study.

It is possible that stressors associated with transition across school systems may contribute to the low self-esteem reported in this study because many of the children were of the age where changing from primary to secondary schools has happened or is imminent. Both ADHD group and non-ADHD are similarly affected by this school transition. Children with ADHD who have pre-existing effects of negative self-esteem will suffer even more than children without ADHD.

4.2 HYPOTHESIS 2

It was predicted that children with ADHD would have a higher occurrence of psychological distress than children without ADHD. Emotional problems and anxiety are usually reflected through behavioural problems. Thus an overview of this issue is important.

As indicated earlier not all components (Anxiety, Happiness and Satisfaction) of this hypothesis were supported. However, there was evidence that Behavioural Problems were reported more often by the children with ADHD than those without ADHD. Interestingly, the more frequently reported items among the ADHD group included feeling worried when they have tests in school, worrying a lot, crying easily and feeling left out of things, while at the same time they also reported having lots of pep, not being nervous, and sleeping well at night. Parents with children with ADHD believed that their children were nervous, highly strung, or tense , were apathetic or unmotivated, that they day-dreamed or got lost in their thoughts and fidgeted.

The ADHD children were inconsistent in their reports of emotional distress. If we were to accept that parents' reports are more accurate than the children's then the level of emotional symptoms in ADHD children would more likely meet full criteria for a diagnosis of other affective or mood disorders. However research is discrepant on this matter. One investigation suggested one third of children with ADHD had a significant affective disorder and met the criteria for anxiety disorder (Munir et al., 1987). It may well be that state of emotional distress is true for ADHD children who then fail to report

anxiety. On the other hand this might mean that they are emotionally labile having mood swings which are accurately reflected by the children's self-report in this study. If this is the case then parents reports tend to focus on negativity in their ADHD children's emotional state. Although Bierderman et al., (1992) found much evidence in the ADHD literature for comorbidity with conduct disorder, anxiety disorder and learning disabilities, they concluded that little is known about that comorbidity with anxiety disorder as Livingston and colleagues assert (Livingston et al., 1990).

The Happiness and Satisfaction Scale was not different for children with ADHD compared with the control group. Children with ADHD rated themselves as being happy, cheerful and liking the way they are.

One of the possible reasons for not having found that children with ADHD differed from the control group significantly in the two subscales (Anxiety and Happiness/Satisfaction) may be due to the fact that children with ADHD who participated in this research were under currently taking medication (Ritalin and Dexamphetamine). This possibility is supported by Barkley (1990). Barkley measured the side effects of placebo and methylphenidate in children over 7 days to 10 days. He found that side effects such as staring, disinterest, sadness and anxiety were reduced with methylphenidate. However, the same author observed that many of these effects, particularly those related to mood were present during placebo conditions and concluded that these may be characteristics associated with the disorder rather than with the treatment. Other researchers found that medication produced improvements in behaviour, academic performance (Jarman, 1996) and self-esteem (Kelly et al., 1989). Taken together, the support for the effects of medication on ADHD behaviour and mood suggests that the differences may well have been clearer if children with ADHD were not medicated in this study.

Stimulants also tend to reduce children's disruptive, noncompliant, and oppositional behaviours (Dulcan, 1986; Hishaw et al., 1989; Walen, Henker, & Granger, 1990). Stimulants not only improve abnormal behaviours of ADHD, but also improve self-esteem, cognition, social and family functions (Spencer et al., 1996; Barkley, 1996 ; DuPaul and Rapport,1993; Alston et al., 1992; Barkley, 1990; Wicks & Israel, 1991;

Verduzco and Lara-Cantu 1989; Kelly, et al., 1989; Pelham, Sturgess & Haza, 1987; Zemetkin & Rapoport, 1987; Bender, Caddell, Boot, & Moorer, 1985; Cohen & Thompson, 1982; Charles & Schain, 1981; Pelham, Henker & Dotemoto, 1980; Whalen, Henker & Dotemoto, 1980; Barkley, 1977a).

There are some possible reasons as to the failure to find significant differences in the Anxiety Subscale. Most of the children with ADHD were diagnosed and treated by paediatricians, psychiatrists, psychologists and general practitioners. These children were therefore likely to have received other kinds of interventions such as cognitive or behavioural therapy. The integration of cognitive procedures with behavioural and medication treatment may result in greater benefits than those that focused on just one strategy (Hinshaw & Erhardt, 1991 cited by Bender, 1997; Abikoff, 1987; Cunningham, Siegel and Offord, 1985; Charles & Schain, 1981). The present study is likely to fail to find differences in those who have undertaken effective treatments.

The expectation that higher incidence of behavioural problems were seen in children with ADHD compared to control group was met. One of the reasons for this could be that children with ADHD have little control over their own lives and behaviour. Parents rated their children (with ADHD) very highly on the Attention Problems Subscale, checking items such as "acts too young for his/her age", "fails to finish things she/he starts", "has difficulty following directions" ,"impulsive or acts without thinking", and, "messy work".

The children with ADHD also perceived themselves as having more behavioural problems than children without ADHD. Children with ADHD rated themselves lower on various items in the subscales on the Piers-Harris self-concept scale such as "I feel left out of things", and "People pick on me". These children appear to respond by trying to command and dominate others as shown in the respective scoring in the items: "I get into a lot of fights" ,"I often get into trouble", "I behave badly at home", "I pick on my brother(s) and sister(s), "It is hard for me to make friends". These findings supported the studies done by Selikowitz,(1995) ; Milich & Landau, 1989 cited in Hinshaw (1992); Whitman & Smith (1991); Parker & Asher, 1987 cited by Bender (1997); Weiss, Hechtman, & Perlman (1978) who concluded that these type of behaviours can

reflect a fragile self-esteem and showed that children with ADHD suffered from low self-esteem.

In contrast, almost all of the children with ADHD felt that they could be trusted , thought that they were easy to get along with and believed that their friends liked their ideas. Once again these reports reflect either a lack of insight or inconsistent behaviour patterns.

Other dysfunctional behaviours were also found when Intellectual and School Status Subscale were independently taken into account for the ADHD group. In a school setting children with ADHD considered themselves as dreamers, they rated high on the items "slow in finishing school work", and they "forget what they learn". Similarly, their parents perceived that their children had difficulty in learning , were underachievers, did not work to their potential, and performed poorly at school.

The parent-child discrepancy in reporting problems because children with ADHD considered themselves as being good in school work, having good ideas, behave well in school, feeling that they are good readers. They also believed that they were important members of their class.

There is some evidence to suggest that it is the parents who are reporting actual levels of psychological distress (mood disturbance, anxiety, irritability) and behavioural problems (fidgeting, aggression), and that the children's self-report is not an accurate perspective. (Bender, 1997; Barkley, 1990).

Parental perceptions support findings by Bender (1997) and Milich & Landau, 1989 cited by Hinshaw (1992) that children with ADHD are often rejected by their peers, and those with comorbid and aggressive features and mood disorders are almost universally repelled by age mates, and that they feel the power of the peer rejection in childhood.

The school is a very powerful factor for those children and is a major social concern. A pattern of social rejection will appear by middle childhood, if not earlier, in over half of

all children with ADHD due to their poor social skills which will further affect their self-esteem (Barkley, 1990).

Children with ADHD regularly display multiple attentional and behavioural and emotional problems that are reflected in school performance. It is not unexpected that children with ADHD experience recurrent academic problems ranging from failure to finish work and poor grades to under achievement which may affect their self-esteem in a significant manner (Slowmkowski et al., 1995).

Self-esteem is especially at risk at the elementary school age because the child may not perform well in contrast to peers. Children with ADHD interpret and judge social situations differently than non-ADHD children. Their behaviour and emotions are not understood by themselves or others. Their peers' view is that children with ADHD are seen as problematic and noisy. Subsequently, they tend to dislike and repel the child with ADHD (Flicek & Landau, 1985; Pope, Bierman and Mumma, 1987). These kind of behaviours affect the levels of anxiety, depression, mood and self-esteem of children with ADHD in a substantial way.

It is not unexpected to find that a great number of children with ADHD are placed within special educational programs for learning disabilities or behaviourally disordered children. (Barkley, 1991; Weiss & Hetchman, 1986; Milich & Loney, 1979; Grizenko et al., 1993). The present study also found that 22% of the children with ADHD were in special education.

4.3 HYPOTHESIS 3

It was expected that boys with ADHD would display lower self-esteem in comparison with girls with ADHD.

There were no differences between boys and girls with ADHD. This finding supports results found by Gaub & Carlson (1997) who also found no sex differences in children with ADHD. They looked at primary symptomatology, intellectual and academic functioning, comorbid behaviour problems, social behaviour and family and self-esteem variables. Szatmari (1992) also found that sex was no longer related to the occurrence of ADHD once their comorbid conditions were controlled.

Similar proportion of boys to girls were reflected in the present study, but overall sample size was too small for drawing conclusions about sex differences. As noted earlier in the literature more boys than girls are diagnosed with ADHD. The ratio is approximately six to nine boys to one girl in clinical samples (Wicks & Israel, 1991). Proportions range between 3:1 (male:female) and 9:1 (APA, 1994, Barkley, 1990).

As Barkley (1996) pointed out, it is still unclear at this time why boys are more likely to have ADHD than girls. It seems that males are more aggressive and oppositional and these kind of behaviour are more often related to ADHD. It is also possible that these behaviours in boys cause higher referrals. He concluded that the differences in prevalence rates were possibly due to different methods in selecting children for referral. These methods varied according to factors which determine what are "normal" and what are abnormal behaviour (e.g., nationality or ethnicity, urban vs rural, age groups, male behaviour), the criteria used to conceptualise ADHD within the populations as well as the age range of the samples.

4.4 HYPOTHESIS 4

It was expected that younger children with ADHD would have higher self-esteem scores than older children with ADHD.

The present study failed to find such differences for age in children with ADHD, however it can be appreciated that there is a tendency of lower reports of self-esteem in the older children with ADHD compared with younger children. Possible reasons for this could be attributed to the following factors:

1. Continuous demands from home. The older the children are the more fragile self-esteem is. These children tend to receive any negative experience with high impact.
2. Increasing school demands and changes in the structure of the educational systems.
3. Immature development of cognitive and emotional characteristics.

The children included in this study sample really belong to the same developmental stage. Without a more extensive age range no conclusions can be reached. Even 11 and 12 year olds were most likely to be still in the concrete stage rather than formal operational stage (Piaget, 1977).

Self-concept develops and changes as a function of a diversity of factors; as we learn to distinguish the self from others (Kelly, 1955; Laing, 1969 in Hattie, 1992); as we learn to differentiate the self from the environment (Lafitte,1957; Lewis & Brooks-Gunn; 1979 in Hattie, 1992) as major reference groups change, which introduces to changes in expectations (Mischel, 1977); as the individual modifies the origin of personal causation (de Charm, 1968 in Hattie, 1992); as we vary in cognitive processing, principally with the development of formal operations (Piaget, 1977 in Hattie, 1992); as the individual change and/or realise cultural values; and as we modify the manner in which we receive confirmation and disconfirmation (Laing, 1969 in Hattie, 1992). Children with ADHD may seem to have problems in each of these instances.

Some limitations of this study have been highlighted during discussion of the individual hypotheses. There were problems in reaching conclusions because of the small sample size and the relatively small age range of the children with ADHD.

4.5 CONCLUSIONS

This study shows that when looking at the overall self-esteem, children with ADHD have lower scores than the control subjects reflecting poor self-evaluations on their own behaviours and attributes. These results confirm that poor self-esteem is one of the most common characteristics found in children with ADHD and is consistent with findings of other researchers.

The examination for causes of low self-esteem in children with ADHD includes a great number of variables. One is the potential impact of the genetic factors underlying ADHD itself (Heffron, Martin, & Welsh, 1984; Deust, 1989). Other factors are the school environment, peer rejection, and learning problems.

Firm statements about self-esteem in children with ADHD could be made if more observational data were available as well as a confirmation of parental reports from teachers and other important adults in children's lives. The question of the importance of secondary symptoms is clearly established by this study.

The role of social interaction, medication, academic support and parental skills are considered crucial in the development of self-esteem within this particularly vulnerable group of children. Evidence suggests that without intervention to help these children to develop a healthy self-esteem, the efforts in behavioural modification and learning difficulties are less rewarded.

Although the results of the present study do not support various hypotheses associated with differences in age and sex, consideration of other factors suggest these constructs

and the proposed hypothesis are still viable areas for investigation. Future studies need to ensure that they collect a more representative sample of children with ADHD under medication and without medication so that more variability and differences might be found among different factors. Comparison groups of subjects with other mental disorders such as depression, conduct disorders and anxiety would be useful to further determine whether the low self-esteem is specific to children with ADHD or common to a number of illnesses.

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APPENDICES

APPENDIX 1

Diagnostic Criteria for Attention-Deficit Hyperactivity Disordered (DSM-IV)

A. Either (1) or (2):

(1) Six (or more) of the following symptoms of inattention have persisted for at least 6 months to a degree that is maladaptive and inconsistent with developmental level:

Inattention:

(a) often fails to give close attention to details or makes careless mistakes in school work, work, or other activities;
(b) often has difficulty sustaining attention in tasks or play activities;
(c) often does not seem to listen when spoken directly;
(d) often does not follow through on instructions and fails to finish school work, chores, or duties in the workplace (not due to oppositional behaviour or failure to understand instructions);
(e) often has difficulty organising tasks and activities;
(f) often avoids, dislikes, or is reluctant to engage in tasks that require sustained mental effort (such as school work or homework);
(g) often loses things necessary for tasks or activities (eg toys, school assignments, pencils, books or tools);
(h) is often easily distracted by extraneous stimuli;
(i) is often forgetful in daily activities

(2) Six (or more) of the following symptoms of hyperactivity impulsivity have persisted for at least 6 months to a degree that is maladaptive and inconsistent with developmental level:

Hyperactivity

(a) often fidgets with hands or feet or squirms in seat;
(b) often leaves seat in classroom or in other situations in which remaining seated is expected;
(c) often runs about or climbs excessively in situations in which it inappropriate (in adolescents or adults, may be limited to subjective feelings of restlessness;
(d) often has difficulty playing or engaging in leisure activities quietly;
(e) is often "on the go" or often acts if "driven by a motor";
(f) often talks excessively.

Impulsivity

(g) often blurts out answers before questions have been completed;
(h) often has difficulty awaiting a turn;
(i) often interrupts or intrudes on others (e.g. butts into conversations and games);

B. Some hyperactive-impulsive or inattentive symptoms that caused impairment were present before 7 years.

C. Some impairment from symptoms is present in two or more settings (e.g. at school for work and at home).

D There must be clear evidence of clinically significant impairment in social, academic, or occupational functioning.

E. The symptoms do not occur exclusively during the course of a Pervasive Developmental Disorder, Schizophrenia, or other Psychotic Disorder and are not better accounted for by another mental disorder (e.g. Mood Disorder, Anxiety disorder, Dissociative Disorder, or a Personality Disorder).

Codes bases on type:

314.01 **Attention Deficit /Hyperactivity Disorder, Combined Type**: if both criteria A1 and A2 are met for the past 6 months.

314.00 **Attention Deficit/Hyperactivity Disorder, Predominantly Inattentive Type:** if Criterion A1 is met but Criterion A2 is not met for the past 6 months.

314.01 **Attention Deficit/Hyperactivity Disorder, Predominantly Hyperactive-Impulsive Type**: if Criterion A2 is met but Criterion A1 is not met for the past 6 months.

Note: From Diagnostic and Statistical Manual of Mental Disorders (fourth edition)

APPENDIX 2

Table 2. ACD-10 Diagnosis Criteria for Hyperkinetic Disorders

A. Demonstrable abnormality of attention and activity at HOME, for the age and developmental level of the child, as evidenced by at least three of the following attention problems:
   (1) short duration of spontaneous activities;
   (2) often leaving play activities unfinished;
   (3) over-frequent changes between activities;
   (4) undue lack of persistence at task set by adults;
   (5) unduly high distractibility during study, e.g, homework or reading assignment; and by at least two of the following problems:
   (6) continuous motor restlessness (running, jumping, etc.);
   (7) markedly excessive fidgeting and wriggling during spontaneous activities;
   (8) markedly excessive activity in situations expecting relative stillness (e.g. meal time's, travel, visiting, church);
   (9) difficulty in remaining seated when required;

B. Demonstrable abnormality of attention and activity at SCHOOL or NURSERY (if applicable), for the age and developmental level of the child, as evidenced by at least two of the following attention problems:
   (1) undue lack of persistence at task;
   (2) unduly high distractibility, i.e. often orientating towards extrinsic stimuli;
   (3) over-frequent changes between activities when choice is allowed;
   (4) excessively short duration of play activities; and by at least two of the following activity problems:
   (5) continuous and excessive motor restlessness (running, jumping, etc.) in situations allowing free activity;
   (6) markedly excessive fidgeting and wriggling in structured situations;
   (7) excessive levels of off-task activity during tasks;
   (8) unduly often out of seat when required seated;

C. Directly observed abnormality of attention or activity. This must be excessive for the child's age and developmental level. The evidence may be any of the following:
   (1) direct observation of the criteria A or B above, i.e. not solely the report of parent and/or teacher;
   (2) observation of abnormal levels of motor activity, or off-task behaviour, or lack of persistence in activities, in a sitting outside home or school (e.g. clinic or laboratory);
   (3) significant impairment of performance on psychometric tests of attention.

D. Does not meet criteria for pervasive developmental disorder (F84), mania (F30), depressive (F32) or anxiety disorder (F41).

E. Onset before the AGE OF SIX YEARS.

F. Duration of AT LEAST SIX MONTHS.

Note: from the International Classification of Diseases (10thed.) by the World Health Organisation, 1990.

"THE WAY I FEEL ABOUT MYSELF"

The Piers-Harris Children's Self-Concept Scale

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ame: _____ Today's Date: _____

ge: _____ Sex (circle one): Girl Boy Grade: _____

chool: _____ Teacher's Name (optional): _____

Directions: Here is a set of statements that tell how some people feel about themselves. Read each statement and decide whether or not it describes the way you feel about yourself. If it is *true or mostly true* for you, circle the word "yes" next to the statement. If it is *false or mostly false* for you, circle the word "no." Answer every question, even if some are hard to decide. Do not circle both "yes" and "no" for the same statement.

Remember that there are no right or wrong answers. Only you can tell us how you feel about yourself, so we hope you will mark the way you really feel inside.

TOTAL SCORE: Raw Score_____ Percentile_____ Stanine_____

CLUSTERS: I_____ II_____ III_____ IV_____ V_____ VI_____

1. My classmates make fun of me .....yes no
2. I am a happy person .....yes no
3. It is hard for me to make friends .....yes no
4. I am often sad .....yes no
5. I am smart .....yes no
6. I am shy .....yes no
7. I get nervous when the teacher calls on me .....yes no
8. My looks bother me .....yes no
9. When I grow up, I will be an important person .....yes no
10. I get worried when we have tests in school .....yes no
11. I am unpopular .....yes no
12. I am well behaved in school .....yes no
13. It is usually my fault when something goes wrong .....yes no
14. I cause trouble to my family.....yes no
15. I am strong .....yes no
16. I have good ideas .....yes no
17. I am an important member of my family .....yes no
18. I usually want my own way .....yes no
19. I am good at making things with my hands .....yes no
20. I give up easily .....yes no
21. I am good in my school work .....yes no
22. I do many bad things .....yes no
23. I can draw well .....yes no
24. I am good in music.....yes no
25. I behave badly at home .....yes no
26. I am slow in finishing my school work.....yes no
27. I am an important member of my class .....yes no
28. I am nervous .....yes no
29. I have pretty eyes.....yes no
30. I can give a good report in front of the class..yes no
31. In school I am a dreamer .....yes no
32. I pick on my brother(s) and sister(s) .....yes no
33. My friends like my ideas.....yes no
34. I often get into trouble .....yes no
35. I am obedient at home .....yes no
36. I am lucky .....yes no
37. I worry a lot.....yes no
38. My parents expect too much of me .....yes no
39. I like being the way I am .....yes no
40. I feel left out of things .....yes no

41. I have nice hair ..... yes no
42. I often volunteer in school ..... yes no
43. I wish I were different ..... yes no
44. I sleep well at night ..... yes no
45. I hate school ..... yes no
46. I am among the last to be chosen for games ..... yes no
47. I am sick a lot ..... yes no
48. I am often mean to other people ..... yes no
49. My classmates in school think I have good ideas ..... yes no
50. I am unhappy ..... yes no
51. I have many friends ..... yes no
52. I am cheerful ..... yes no
53. I am dumb about most things ..... yes no
54. I am good-looking ..... yes no
55. I have lots of pep ..... yes no
56. I get into a lot of fights ..... yes no
57. I am popular with boys ..... yes no
58. People pick on me ..... yes no
59. My family is disappointed in me ..... yes no
60. I have a pleasant face ..... yes no
61. When I try to make something, everything seems to go wrong ..... yes
62. I am picked on at home ..... yes
63. I am a leader in games and sports ..... yes
64. I am clumsy ..... yes
65. In games and sports, I watch instead of play ..... yes
66. I forget what I learn ..... yes
67. I am easy to get along with ..... yes
68. I lose my temper easily ..... yes
69. I am popular with girls ..... yes
70. I am a good reader ..... yes
71. I would rather work alone than with a group ..... yes
72. I like my brother (sister) ..... yes
73. I have a good figure ..... yes
74. I am often afraid ..... yes
75. I am always dropping or breaking things ..... yes
76. I can be trusted ..... yes
77. I am different from other people ..... yes
78. I think bad thoughts ..... yes
79. I cry easily ..... yes
80. I am a good person ..... yes

For examiner use only

	1–20	+ 21–40	+ 41–60	+ 61–80	= 1–80 Total
I	____	____	____	____	____
II	____	____	____	____	____
III	____	____	____	____	____
IV	____	____	____	____	____
V	____	____	____	____	____
VI	____	____	____	____	____
Total Score	____	____	____	____	____

APPENDIX 4

Dear Parent(s),

I am studying for the degree of Masters in Clinical Psychology at the Australian National University in Canberra. I am doing my thesis on the ***'Self-concept of Attention Deficit Hyperactivity Disorder (ADHD) Children on a Medication Regime'***. My study seeks to consolidate the research findings on the aetiology, conceptualisation, self-concept, and the effects of medication on children diagnosed as having **ADHD**.

My research survey has been approved by the ACT Department of Education and Training and the Australian National University Ethics Committee. I understand that your child may have **A**ttention **D**eficit **D**isorder (**ADD**) or **A**ttention **D**eficit **H**yperactivity **D**isorder (**ADHD**). I am writing to seek your cooperation in the conducting of a survey by questionnaire. Please complete the attached note and return it **along with the two questionnaires**, whether or not you wish to have your child participate in this study. The required age of the child must be between **9 to 12 years old**.

There will be two questionnaires. The first is **the Piers-Harris Children's Self-Concept Scale "The Way I feel About Myself"** for your child to complete (although they might need adult assistance). It consists of eighty (80) questions which reflect the likes and/or concerns that your child has about himself or herself.

The second questionnaire is for parents, **"Child Behaviour Checklist"**. It is about your recollections of the symptoms your child had that led you to have him or her seen by a doctor and about your child's current medication regime and medical history.

After you have completed both questionnaires, please place them in the stamped, addressed envelope I have provided, for your convenience, and post them to me.

The participants in this research study will not be identifiable and all information will be kept by me in the strictest of confidence. I will be making a copy of my findings available to the ADHD Parents' Association after they are assessed and published.

I look forward to hearing from you soon.

Yours sincerely,

(Mrs) Patricia Peneder
Psychologist

Mrs Peneder,

I do / do not wish for my child _____ to participate in your study.
(Please print name of your child)

_____ / / 96
Parent's / Guardian's signature

APPENDIX 5

CHILD BEHAVIOUR CHECKLIST (Parents to complete)

PART 1.

Child's Name : _____ Sex: : Male ❑ Female ❑

Grade in School : _____ Not attending school ❑

School : _____ Date : / /96

1. Is your child in a special class or special school?

   No ❑ Yes ❑

2. Does your child have **A**ttention **D**eficit **D**isorder (**ADD**) ?

   No ❑ Yes ❑

3. If so, who diagnosed him/her as having **ADD**? (please tick):

Paediatrician	❑	Teacher	❑
General Practitioner	❑	Others (please specify)	❑
Psychiatrist / Psychologist	❑	_____	

4. Does your child have **A**ttention **D**eficit **H**yperactivity **D**isorder (**ADHD**) ?

   No ❑ Yes ❑

5. If so, who diagnosed him/her as having **ADHD**? (please tick):

Paediatrician	❑	Teacher	❑
General Practitioner	❑	Others (please specify)	❑
Psychiatrist / Psychologist	❑	_____	

6. Has your child ever taken medication prescribed for **ADD** or **ADHD** ?

   No ❑ Yes ❑

Which medication was it ? How many times each day ?

_____ _____

How many milligrams per dose ? How long was (s)he on it ?

_____ _____

7. Is (s)he currently taking medication

   No ❑ Yes ❑

   If your child ceased taking medication, how long ago ? (please tick):

One week	❑	One month to two months	❑
Three months to six months	❑	Six months to one year	❑
More than one year	❑		

PART 2.
Below there is a number of items that describe the behaviour of some children.
Please consider each statement carefully in relation to your child's behaviour, now or within the past 6 months..
If the item is **not true** of your child, **circle 0.**
Circle the 1 if the item is **somewhat or sometimes true** of your child.
Circle the 2 if the item is **true or often true** of your child.

0 = Not true
1 = Somewhat or sometimes true
2 = True or often true

Acts too young for his/her age.	**0**	**1**	**2**
Hums or makes other odd noises during class.	**0**	**1**	**2**
Fails to finish things (s)he starts.	**0**	**1**	**2**
Can't concentrate, can't pay attention for long.	**0**	**1**	**2**
Can't sit still , is restless, or hyperactive.	**0**	**1**	**2**
Fidgets.	**0**	**1**	**2**
Day-dreams or gets lost in his/her thoughts.	**0**	**1**	**2**
Has difficulty following directions.	**0**	**1**	**2**
Impulsive or acts without thinking.	**0**	**1**	**2**
Nervous, highly strung, or tense.	**0**	**1**	**2**
Has difficulty learning.	**0**	**1**	**2**
Is apathetic or unmotivated.	**0**	**1**	**2**
Performing poorly at school.	**0**	**1**	**2**
Poorly co-ordinated or clumsy.	**0**	**1**	**2**
Messy work.	**0**	**1**	**2**
Inattentive, easily distracted.	**0**	**1**	**2**
Stares blankly.	**0**	**1**	**2**
Underachieving, not working to his/her potential.	**0**	**1**	**2**
Fails to carry out assigned tasks	**0**	**1**	**2**

Thank you for your co-operation in completing this survey

APPENDIX 6

School Age Norms (Grades 4 through 12) The Piers-Harris Children's Self-Concept Scale: "The way I feel about my self"

Piers-Harris Raw Score	Percentile	Stanine	Piers-Harris Raw Score	Percentile	Stanine
80			44	27	4
79			43	24	4
78			42	23	3
77			41	21	3
76	99		40	20	3
75	98		39	18	3
74	97	9	38	17	3
73	96	8	37	15	3
72	95	8	36	14	3
71	94	8	35	13	3
70	93	8	34	12	3
69	91	8	33	11	3
68	89	7	32	10	3
67	87	7	31	9	3
66	85	7	30	8	2
65	82	7	29	7	2
64	79	7	28	6	2
63	77	6	27	6	2
62	74	6	26	5	2
61	71	6	25	5	2
60	69	6	24	4	2
59	66	6	23	3	2
58	63	6	22	3	1
57	60	5	21	2	
56	57	5	20	2	
55	55	5	19	2	
54	52	5	18	1	
53	49	5	17		
52	46	5	16		
51	44	5	15		
50	41	5	14		
49	38	4	13		
48	36	4	12		
47	33	4	11		
46	31	4	10		
45	29	4			